User Guide

MediaLink®

MLC 62 Series

MediaLink Controllers

Extron® Electronics
INTERFACING, SWITCHING AND CONTROL

68-1731-01 **Rev. B**
07 10

Safety Instructions • English

This symbol is intended to alert the user of important operating and maintenance (servicing) instructions in the literature provided with the equipment.

This symbol is intended to alert the user of the presence of uninsulated dangerous voltage within the product's enclosure that may present a risk of electric shock.

Caution

Read Instructions • Read and understand all safety and operating instructions before using the equipment.

Retain Instructions • The safety instructions should be kept for future reference.

Follow Warnings • Follow all warnings and instructions marked on the equipment or in the user information.

Avoid Attachments • Do not use tools or attachments that are not recommended by the equipment manufacturer because they may be hazardous.

Warning

Power sources • This equipment should be operated only from the power source indicated on the product. This equipment is intended to be used with a main power system with a grounded (neutral) conductor. The third (grounding) pin is a safety feature, do not attempt to bypass or disable it.

Power disconnection • To remove power from the equipment safely, remove all power cords from the rear of the equipment, or the desktop power module (if detachable), or from the power source receptacle (wall plug).

Power cord protection • Power cords should be routed so that they are not likely to be stepped on or pinched by items placed upon or against them.

Servicing • Refer all servicing to qualified service personnel. There are no user-serviceable parts inside. To prevent the risk of shock, do not attempt to service this equipment yourself because opening or removing covers may expose you to dangerous voltage or other hazards.

Slots and openings • If the equipment has slots or holes in the enclosure, these are provided to prevent overheating of sensitive components inside. These openings must never be blocked by other objects.

Lithium battery • There is a danger of explosion if battery is incorrectly replaced. Replace it only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

Consignes de Sécurité • Français

Ce symbole sert à avertir l'utilisateur que la documentation fournie avec le matériel contient des instructions importantes concernant l'exploitation et la maintenance (réparation).

Ce symbole sert à avertir l'utilisateur de la présence dans le boîtier de l'appareil de tensions dangereuses non isolées posant des risques d'électrocution.

Attention

Lire les instructions• Prendre connaissance de toutes les consignes de sécurité et d'exploitation avant d'utiliser le matériel.

Conserver les instructions• Ranger les consignes de sécurité afin de pouvoir les consulter à l'avenir.

Respecter les avertissements • Observer tous les avertissements et consignes marqués sur le matériel ou présentés dans la documentation utilisateur.

Eviter les pièces de fixation • Ne pas utiliser de pièces de fixation ni d'outils non recommandés par le fabricant du matériel car cela risquerait de poser certains dangers.

Avertissement

Alimentations • Ne faire fonctionner ce matériel qu'avec la source d'alimentation indiquée sur l'appareil. Ce matériel doit être utilisé avec une alimentation principale comportant un fil de terre (neutre). Le troisième contact (de mise à la terre) constitue un dispositif de sécurité : n'essayez pas de la contourner ni de la désactiver.

Déconnexion de l'alimentation• Pour mettre le matériel hors tension sans danger, déconnectez tous les cordons d'alimentation de l'arrière de l'appareil ou du module d'alimentation de bureau (s'il est amovible) ou encore de la prise secteur.

Protection du cordon d'alimentation • Acheminer les cordons d'alimentation de manière à ce que personne ne risque de marcher dessus et à ce qu'ils ne soient pas écrasés ou pincés par des objets.

Réparation-maintenance • Faire exécuter toutes les interventions de réparation-maintenance par un technicien qualifié. Aucun des éléments internes ne peut être réparé par l'utilisateur. Afin d'éviter tout danger d'électrocution, l'utilisateur ne doit pas essayer de procéder lui-même à ces opérations car l'ouverture ou le retrait des couvercles risquent de l'exposer à de hautes tensions et autres dangers.

Fentes et orifices • Si le boîtier de l'appareil comporte des fentes ou des orifices, ceux-ci servent à empêcher les composants internes sensibles de surchauffer. Ces ouvertures ne doivent jamais être bloquées par des objets.

Lithium Batterie • Il a danger d'explosion s'll y a remplacment incorrect de la batterie. Remplacer uniquement avec une batterie du meme type ou d'un ype equivalent recommande par le constructeur. Mettre au reut les batteries usagees conformement aux instructions du fabricant.

Sicherheitsanleitungen • Deutsch

Dieses Symbol soll dem Benutzer in der im Lieferumfang enthaltenen Dokumentation besonders wichtige Hinweise zur Bedienung und Wartung (Instandhaltung) geben.

Dieses Symbol soll den Benutzer darauf aufmerksam machen, daß im Inneren des Gehäuses dieses Produktes gefährliche Spannungen, die nicht isoliert sind und die einen elektrischen Schock verursachen können, herrschen.

Achtung

Lesen der Anleitungen • Bevor Sie das Gerät zum ersten Mal verwenden, sollten Sie alle Sicherheits-und Bedienungsanleitungen genau durchlesen und verstehen.

Aufbewahren der Anleitungen • Die Hinweise zur elektrischen Sicherheit des Produktes sollten Sie aufbewahren, damit Sie im Bedarfsfall darauf zurückgreifen können.

Befolgen der Warnhinweise • Befolgen Sie alle Warnhinweise und Anleitungen auf dem Gerät oder in der Benutzerdokumentation.

Keine Zusatzgeräte • Verwenden Sie keine Werkzeuge oder Zusatzgeräte, die nicht ausdrücklich vom Hersteller empfohlen wurden, da diese eine Gefahrenquelle darstellen können.

Vorsicht

Stromquellen • Dieses Gerät sollte nur über die auf dem Produkt angegebene Stromquelle betrieben werden. Dieses Gerät wurde für eine Verwendung mit einer Hauptstromleitung mit einem geerdeten (neutralen) Leiter konzipiert. Der dritte Kontakt ist für einen Erdanschluß, und stellt eine Sicherheitsfunktion dar. Diese sollte nicht umgangen oder außer Betrieb gesetzt werden.

Stromunterbrechung • Um das Gerät auf sichere Weise vom Netz zu trennen, sollten Sie alle Netzkabel aus der Rückseite des Gerätes, aus der externen Stomversorgung (falls dies möglich ist) oder aus der Wandsteckdose ziehen.

Schutz des Netzkabels • Netzkabel sollten stets so verlegt werden, daß sie nicht im Weg liegen und niemand darauf treten kann oder Objekte darauf- oder unmittelbar dagegengestellt werden können.

Wartung • Alle Wartungsmaßnahmen sollten nur von qualifiziertem Servicepersonal durchgeführt werden. Die internen Komponenten des Gerätes sind wartungsfrei. Zur Vermeidung eines elektrischen Schocks versuchen Sie in keinem Fall, dieses Gerät selbst öffnen, da beim Entfernen der Abdeckungen die Gefahr eines elektrischen Schlags und/oder andere Gefahren bestehen.

Schlitze und Öffnungen • Wenn das Gerät Schlitze oder Löcher im Gehäuse aufweist, dienen diese zur Vermeidung einer Überhitzung der empfindlichen Teile im Inneren. Diese Öffnungen dürfen niemals von anderen Objekten blockiert werden.

Litium-Batterie • Explosionsgefahr, falls die Batterie nicht richtig ersetzt wird. Ersetzen Sie verbrauchte Batterien nur durch den gleichen oder einen vergleichbaren Batterietyp, der auch vom Hersteller empfohlen wird. Entsorgen Sie verbrauchte Batterien bitte gemäß den Herstelleranweisungen.

Instrucciones de seguridad • Español

Este símbolo se utiliza para advertir al usuario sobre instrucciones importantes de operación y mantenimiento (o cambio de partes) que se desean destacar en el contenido de la documentación suministrada con los equipos.

Este símbolo se utiliza para advertir al usuario sobre la presencia de elementos con voltaje peligroso sin protección aislante, que puedan encontrarse dentro de la caja o alojamiento del producto, y que puedan representar riesgo de electrocución.

Precaucion

Leer las instrucciones • Leer y analizar todas las instrucciones de operación y seguridad, antes de usar el equipo.

Conservar las instrucciones • Conservar las instrucciones de seguridad para futura consulta.

Obedecer las advertencias • Todas las advertencias e instrucciones marcadas en el equipo o en la documentación del usuario, deben ser obedecidas.

Evitar el uso de accesorios • No usar herramientas o accesorios que no sean especificamente recomendados por el fabricante, ya que podrian implicar riesgos.

Advertencia

Alimentación eléctrica • Este equipo debe conectarse únicamente a la fuente/tipo de alimentación eléctrica indicada en el mismo. La alimentación eléctrica de este equipo debe provenir de un sistema de distribución general con conductor neutro a tierra. La tercera pata (puesta a tierra) es una medida de seguridad, no puentearia ni eliminaria.

Desconexión de alimentación eléctrica • Para desconectar con seguridad la acometida de alimentación eléctrica al equipo, desenchufar todos los cables de alimentación en el panel trasero del equipo, o desenchufar el módulo de alimentación (si fuera independiente), o desenchufar el cable del receptáculo de la pared.

Protección del cables de alimentación • Los cables de alimentación eléctrica se deben instalar en lugares donde no sean pisados ni apretados por objetos que se puedan apoyar sobre ellos.

Reparaciones/mantenimiento • Solicitar siempre los servicios técnicos de personal calificado. En el interior no hay partes a las que el usuario deba acceder. Para evitar riesgo de electrocución, no intentar personalmente la reparación/mantenimiento de este equipo, ya que al abrir o extraer las tapas puede quedar expuesto a voltajes peligrosos u otros riesgos.

Ranuras y aberturas • Si el equipo posee ranuras o orificios en su caja/alojamiento, es para evitar el sobrecalientamiento de componentes internos sensibles. Estas aberturas nunca se deben obstruir con otros objetos.

Batería de litio • Existe riesgo de explosión si esta batería se coloca en la posición incorrecta. Cambiar esta batería únicamente con el mismo tipo (o su equivalente) recomendado por el fabricante. Desachar las baterías usadas siguiendo las instrucciones del fabricante.

安全须知 • 中文

这个符号提示用户该设备用户手册中有重要的操作和维护说明。

这个符号警告用户该设备机壳内有暴露的危险电压，有触电危险。

注意

阅读说明书 • 用户使用该设备前必须阅读并理解所有安全和使用说明。

保存说明书 • 用户应保存安全说明书以备将来使用。

遵守警告 • 用户应遵守产品和用户指南上的所有安全和操作说明。

避免追加 • 不要使用该产品厂商没有推荐的工具或追加设备，以避免危险。

警告

电源 • 该设备只能使用产品上标明的电源。 设备必须使用有地线的供电系统供电。 第三条线（地线）是安全设施，不能不用或跳过 。

拔掉电源 • 为安全地从设备拔掉电源，请拔掉所有设备后或桌面电源的电源线，或任何接到市电系统的电源线。

电源线保护 • 妥善布线， 避免被踩踏，或重物挤压。

维护 • 所有维修必须由认证的维修人员进行。 设备内部没有用户可以更换的零件。为避免出现触电危险不要自己试图打开设备盖子维修该设备。

通风孔 • 有些设备机壳上有通风槽或孔，它们是用来防止机内敏感元件过热。 不要用任何东西挡住通风孔。

锂电池 • 不正确的更换电池会有爆炸的危险。必须使用与厂家推荐的相同或相近型号的电池。按照生产厂的建议处理废弃电池。

FCC Class A Notice

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

The Class A limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

NOTE: This unit was tested with shielded cables on the peripheral devices. Shielded cables must be used with the unit to ensure compliance with FCC emissions limits.

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Introduction

This section gives an overview of the guide and describes the MLC 62 Series MediaLink® Controllers and their features. Topics that are covered include:

- **About This Guide**
- **About the MLC 62 Series MediaLink Controllers**
- **System Requirements**

About This Guide

This guide provides detailed information and best practice recommendations about cabling and configuring the Extron® MLC 62 Series MediaLink Controllers, and reference information about specifications, dimensions, and programming of the controllers.

Throughout this guide the MLC 62 controllers are interchangeably referred to as "MLC 62," "MLC," or "controller."

About the MLC 62 Series MediaLink Controllers

The Extron MLC 62 Series MediaLink Controllers are panels that control a wide range of audio/video systems in any classroom, meeting facility, or auditorium via RS-232 or IR control. They act as extended remote control panels, featuring eight (optionally six) labeled backlit buttons that can be configured to control power, input switching, and volume on a display device or switcher. If desired, you can replace these buttons with ones having different labels, which also are provided with the controller. The buttons can be configured via the MLC 62 Windows®-based configuration software.

All models can control a projector, display, or switcher via IR. In addition, the MLC 62 RS models can control display devices, switchers, and various other items such as lights, a projector lift, or a motorized screen via RS-232, IR, relays, or digital input.

The MLC 62 controllers are housed in secure, compact, one-gang sized enclosures, which can be mounted on a wall or furniture, with or without an electrical junction box or mounting bracket.

MLC 62 Models

The MLC 62 Series MediaLink Controllers include the following models:

MLC 62 IR D — US model. Controls devices by IR only; has a one-gang Decora® faceplate and fits in a one-gang US electrical box.

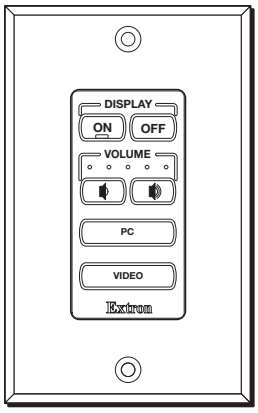
MLC 62 RS D — US model. Controls devices by RS-232, IR, relays, and digital input; has a one-gang Decora faceplate and fits in a one-gang US electrical box.

MLC 62 RS EU — European model. Controls devices by RS-232, IR, relays, and digital input; has a one-gang Jung frame and fits over a standard one-gang EU electrical box.

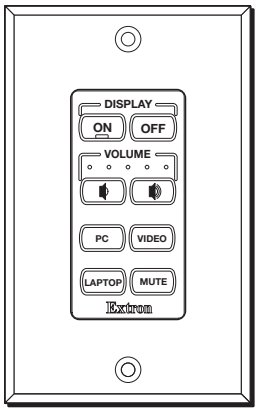
MLC 62 RS MK — UK model. Controls devices by RS-232, IR, relays, and digital input; has a standard MK sized frame and fits into a standard one-gang MK electrical box.

The four MLC 62 models have the same button functionality and use the same configuration software. All models can be controlled by pressing the front panel buttons or via a host device using RS-232 communication and simple ASCII commands (Simple Instruction Set, SIS™). They differ from each other in the following ways:

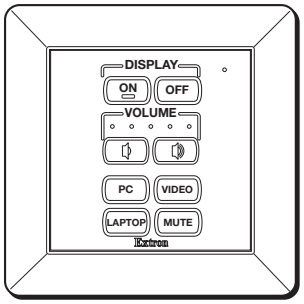
- The MLC 62 IR D rear panel does not contain the Relay, Digital Input, or RS-232 display ports that the RS models have.
- Some front, side, and rear panel connectors are located in different places on the three RS models. (See "**Panels and Connectors**" in the "Features, Cabling, and Operation" section.)



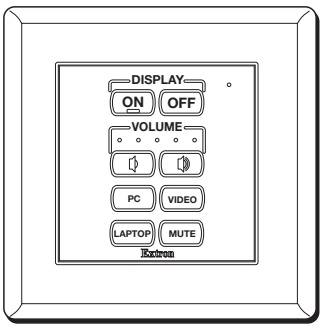
MLC 62 IR D



MLC 62 RS D



MLC 62 RS EU



MLC 62 RS MK

Figure 1. MLC 62 Models

Faceplate alternatives

All MLC 62 models are available in eight-button and six-button configurations.

- **MLC 62 IR D:** The US IR model is delivered with two six-button faceplates in black and white. One black and one white Decora wallplate are also provided. An eight-button faceplate kit is available to order.
- **MLC 62 RS D:** The US RS-232 model is delivered with two eight-button faceplates in black and white. One black and one white Decora wallplate are also provided. In addition, a kit is available to order, containing six-button faceplates in black and white and an assortment of buttons.
- **MLC 62 RS EU:** The European model is delivered with six-button and eight-button faceplates, both in RAL9010 white.
- **MLC 62 RS MK:** The UK model is delivered with six-button and eight-button faceplates, both in white.

Additional button sets are available for the EU and MK models, labeled in English (the default) and other languages. Refer to the Extron Web site at **www.extron.com** for ordering information.

Features

Some of the features of MLC 62 include:

- **Customizable buttons** — Eight buttons are standard on the MLC 62 and are prelabeled for power on, power off, volume up, volume down, and input selections. An additional set of prelabeled buttons is included, enabling the controllers to be customized to suit the application.
- **Button backlighting** — The front panel buttons are backlit to facilitate use in low-light environments.
- **Alternative six-button configuration** — For applications in which only a single function is necessary for an input device, the standard eight-button faceplate can be replaced with a six-button one. Each pair of source selection buttons can be changed to a long, single function button.
- **IR and RS-232 ports** — The MLC 62 RS models have a dedicated serial port for communicating with most types of projectors or flat panel displays via unidirectional RS-232. They also have an IR/S port, which enables IR or RS-232 control.

  The MLC 62 IR D has only an IR port, which is used for IR communication only.

  IR and RS-232 display control drivers can be downloaded and used to configure the controller.
- **Relays** (RS models) — Two relay ports enable control of room devices such as lights, motorized screens, and projector lifts.
- **Digital Input** (RS models) — A Digital Input port enables monitoring of a switch or sensor to control devices.
- **IR Learning** — The MLC 62 can be configured by IR learning, using the remote control of a switcher or display device to create a driver that enables the MLC to control the device.
- **Device drivers** — A wide variety of Extron certified, ready-to-use device drivers are available via the MLC 62 configuration software, the provided MLC 62 software disk, and the Extron Web site (**www.extron.com**).
- **USB configuration port** — The MLC 62 can be configured via a USB mini B port, located on the rear or side panel (depending on the model). This port can also temporarily provide power to the MLC during configuration.
- **Volume adjustment buttons with LED level indication** — Individual up and down buttons for audio level control with five LEDs that indicate current audio settings.
- **Macro capability** — Each button can be configured to execute multiple actions through the serial or IR control ports.

  For example, a button can be configured so that a single press triggers commands to turn on a display, select the RGB input of the display, and trigger a relay.
- **Toggling** — Buttons can be placed in toggle mode, which adds flexibility by enabling two different sets of commands to be executed with alternating presses of the button.
- **Built-in speaker** — A speaker provides audible feedback when buttons are pressed to confirm user actions.
- **Inactivity timer for display shutoff** — An adjustable timer controls automatic shutdown after a specified period of inactivity.

- **Front panel security lockout** — If the MLC 62 RS D is installed in an unsecured environment where easy access is not desirable, a security lockout feature can be implemented to lock out all front panel controls.
- **Activity LED** — An LED on the MLC front panel lights red, green, or amber to indicate button presses, the transfer of data, front panel lockout, and other actions.
- **Section 508 Compliant** — The MLC 62 meets or exceeds accessibility standards for Electronic Information Technology. For more information about the Extron Commitment to Accessibility, see the Extron Accessibility Web page at **www.extron.com/company/article.aspx?id=accessibility**.

MLC 62 Configuration Software

The included MLC 62 Configuration Program is used to configure the MLC buttons and ports via an RS-232 or USB connection. This software, provided on a DVD that is delivered with the product, enables you to set functions for the front panel buttons and to configure the MLC ports in order to control devices via the MLC. The software works in combination with the IR or RS-232 drivers, also provided with the MLC on DVD or at **www.extron.com**. See "**Installing the Configuration Software**" in the "Software-based Configuration" section to access this program.

Device Drivers

The MLC 62 can control a switcher, projector, or other display device via IR or RS-232 communication. The MLC must have drivers loaded for the devices it will control in order to send commands to those devices. Drivers can be obtained in the following ways:

- IR or an RS-232 driver files can be installed from a disk, downloaded from the Extron Web site (**www.extron.com**), or downloaded from Extron via the driver subscription feature within the Windows-based configuration program. The drivers are saved on your computer in a folder located at C:\Program Files\Extron\Driver2. You can upload the desired drivers to the MLC via the MLC 62 configuration software.
- IR commands can be captured from the IR remote control of a device through IR Learning via the MLC 62 configuration program to create a driver that the MLC can use. When a driver is created, it can be added to the configuration program so that the commands can be used to configure the MLC to control the device. (See "**Configuring Using IR Learning**" in the "Software-based Configuration" section.)

Application Diagrams

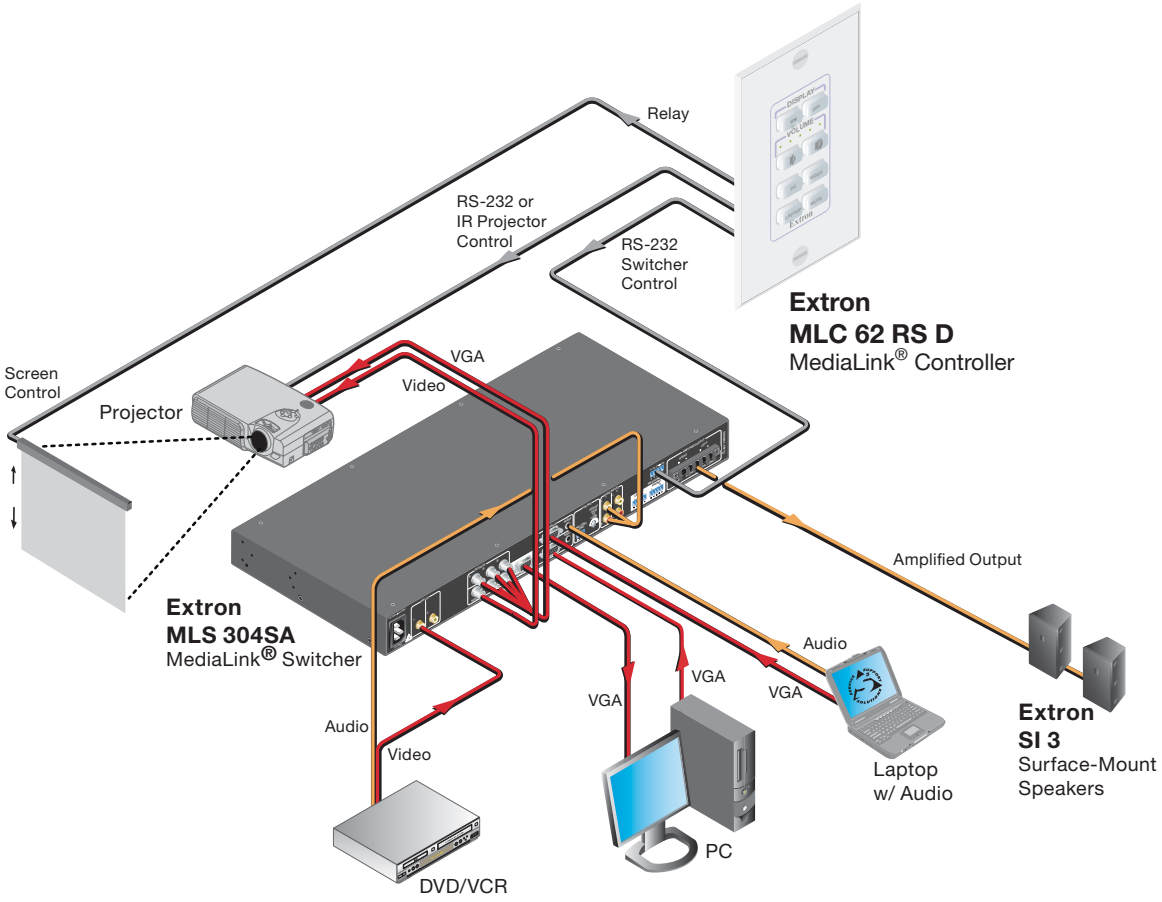


Figure 2. MLC 62 RS D Controlling an MLS 304 SA Switcher and a Projector

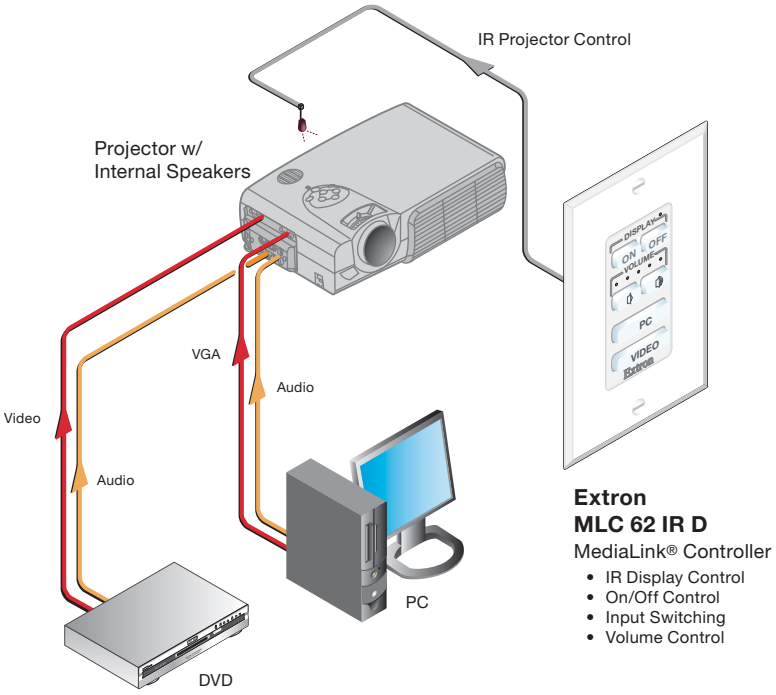


Figure 3. MLC 62 IR D Controlling a Projector

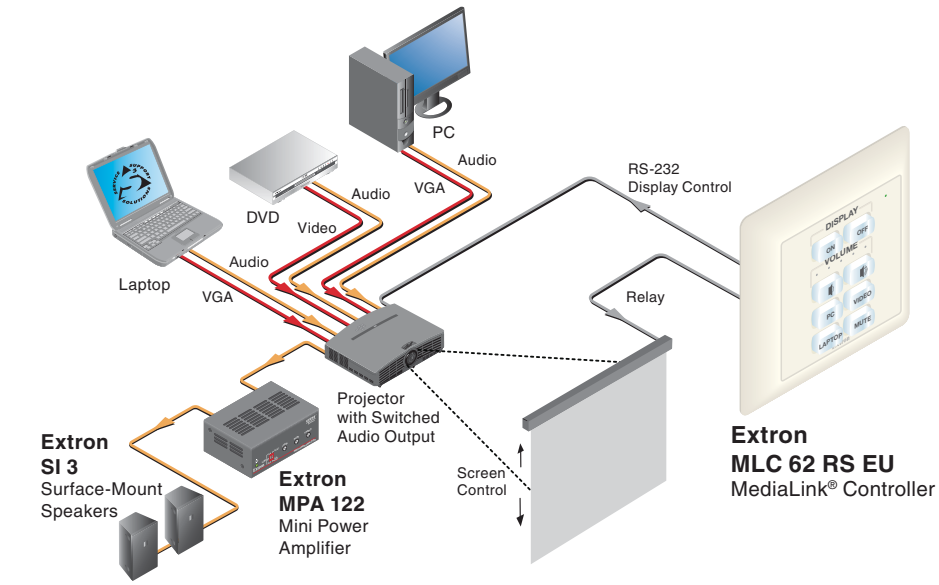


Figure 4. MLC 62 RS EU Controlling a Projector and Screen

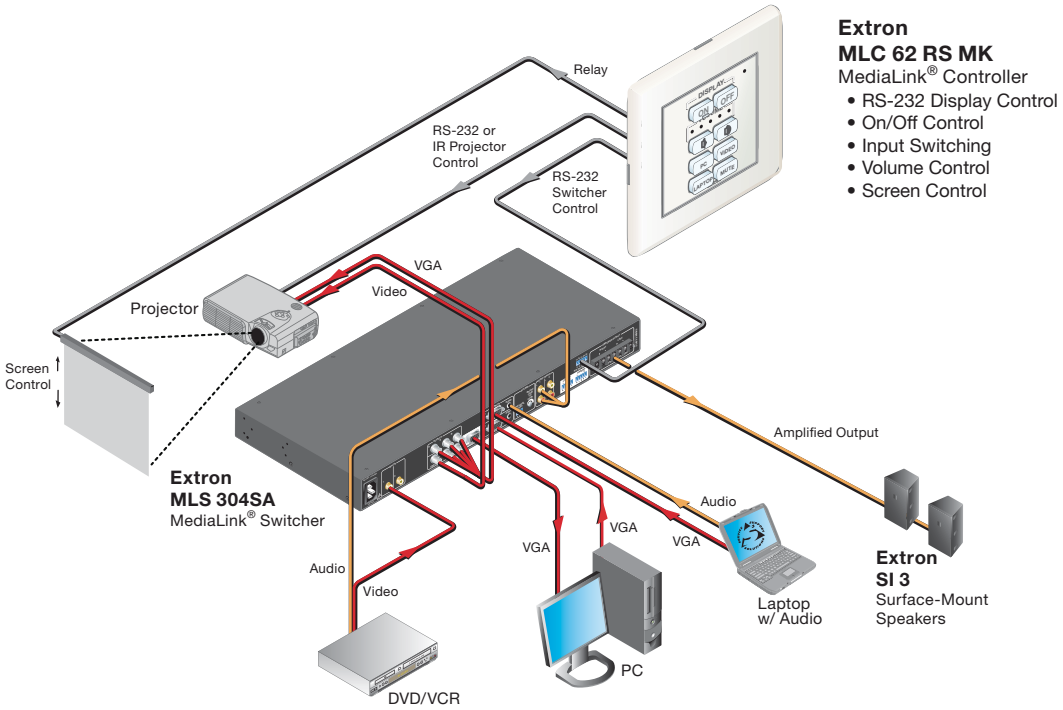


Figure 5. MLC 62 RS EU Controlling a Switcher and a Projector

System Requirements

The minimum PC system requirements for installing the configuration software include:

- Intel® Pentium® III 1-GHz processor
- Microsoft® Windows XP SP2 and Windows 7
- Microsoft.NET Framework 2.0 or higher
- 512 MB of RAM
- 50 MB of available hard disk space

Features, Installation, and Operation

This section describes the front, side, and rear panel features of the four MLC 62 models, and provides procedures for installing and operating the controllers. Topics that are covered include:

- **Installation Checklist**
- **Panels and Connectors**
- **Installation**
- **Configuring the MLC 62 via the USB Port**
- **Mounting the MLC 62**
- **Accessing Covered Panel Features After Mounting**
- **Front Panel Security Lockout (Executive Mode)**
- **Resetting the MLC 62 Using the Reset Button**
- **IR Learning**

Installation Checklist

- ☐ Prepare the installation site as follows:
  - ☐ Measure and cut the hole in the mounting surface.
  - ☐ Prepare and pull the cables through the electrical box or mounting bracket.
  - ☐ Install the electrical box or mounting bracket. (Installation instructions for the electrical box are provided with it.)
- ☐ (Optional) Make any desired changes to the buttons installed in the faceplate, substituting any of the provided additional buttons. (See **Replacing Buttons**, later in this section.)
- ☐ Attach the cables to the rear panel of the MLC and to the display device or switcher. Attach optional IR Emitters if used, and any switches or sensors needed for other room devices (such as lights, a motorized screen, and so forth). See the following sections, later in this section, as needed for cabling information:
  - **Rear Panel Features**
  - **Wiring for RS-232 Control**
  - **Wiring for IR Control**
  - **Wiring the Relays Port**
  - **Wiring the Digital Input Port**

- ☐ Wire and connect the MLC power supply. (See "**Connecting Power to the MLC 62**," later in this section.) Connect all other power cords and turn on all the devices, including the MLC.
- ☐ Connect a configuration cable from the computer to the MLC 62 by doing either of the following:
  - Connect a USB A to mini B cable to the MLC USB configuration port and to a USB port on your computer. (See "**Configuring the MLC 62 via the USB Port**," later in this section.)
  - Connect an RS-232 cable to the provided 3-pin connector and connect it between the MLC Host/Config port and the computer serial port. (See "**Wiring the Host/Config Port**," later in this section.)
- ☐ Download and install the MLC 62 Configuration Program. (See "**Installing the Configuration Software**," in the "Software-based Configuration" section.)
- ☐ Download or create drivers for the devices you will be connecting. (See "**Obtaining Device Drivers**" or "**Configuring Using IR Learning**" in the "Software-based Configuration" section.)
- ☐ Configure the MLC buttons and ports using the configuration program. (Refer to the configuration program help file for these procedures.)

  If you are configuring via the USB port, remove the USB cable when you are finished.
- ☐ Test the system: press the MLC buttons, watch the display, and listen to the audio output to determine whether the connected devices are responding correctly (powering on and off, switching inputs, and so forth). If not, ensure all devices are plugged in and receiving power. Check the cabling and make needed adjustments.
- ☐ Disconnect power from the MLC at the source and from all other devices in the system.
- ☐ Mount the MLC to the mounting surface, following the appropriate procedure for your MLC model, discussed later in this section:
  - For MLC 62 D models, see "**Mounting the MLC 62 D**."
  - For MLC 62 RS EU and MK models, see "**Mounting the MLC 62 RS EU and the MLC 62 RS MK**."
- ☐ Restore power to the MLC and to the connected devices.

Panels and Connectors

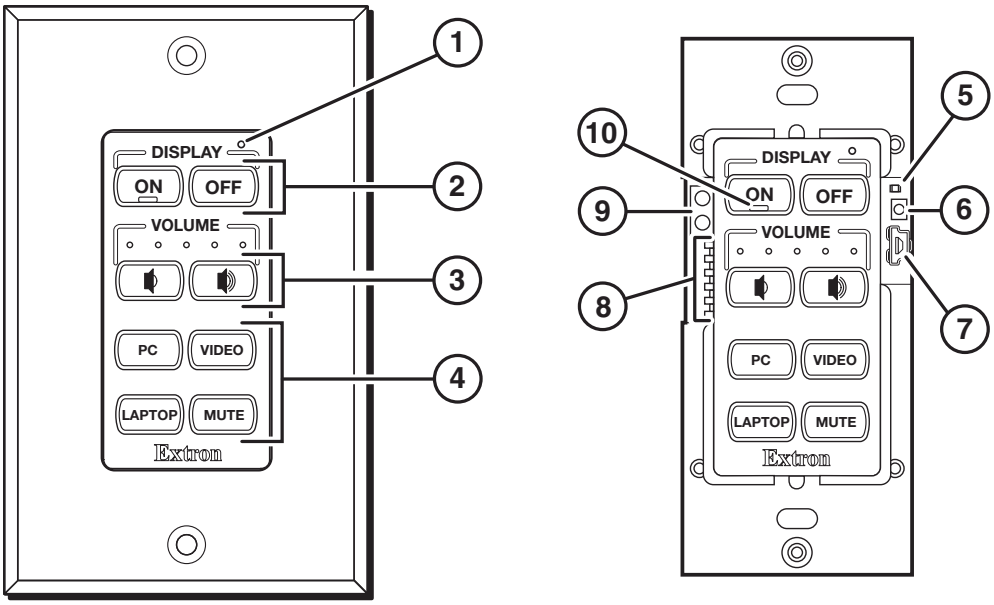
Front and Left Side Panels

Prior to use, the MLC 62 must be configured via the Windows-based configuration program. All front panel buttons can be set up to issue control commands to devices such as switchers or display devices. (See the "**Software-based Configuration**" section to access this software.) The pre-labeled button layout can also be changed. (See "**Replacing Buttons**," later in this section.)

Other controls are located under the wallplate of the MLC 62 D and on the left side panel of the MLC 62 RS EU. To access these controls after installation, remove the wallplate of the MLC 62 D, or remove the MLC 62 RS EU or MLC 62 RS MK and its wall frame from the installation surface. (See "**Accessing Covered Panel Features After Mounting**," later in this section, for the removal procedures.)

MLC 62 RS D

The MLC 62 RS D front panel, by default, contains eight buttons and the indicator LEDs for volume and activity. Other controls and connectors are located on the front panel behind the MLC wallplate. To access these features that are covered during normal operation, you must remove the wallplate. (See "**Accessing the Covered MLC 62 D Front Panel Features**," later in this section.)



Wallplate Attached **Wallplate Removed**

Figure 6. MLC 62 RS D Front Panel

MLC 62 IR D

The MLC 62 IR D front panel, by default, contains two double-sized input buttons in place of the four single buttons on the MLC 62 RS D (see the illustration below). All other front panel features are the same as those on the MLC 62 RS D.

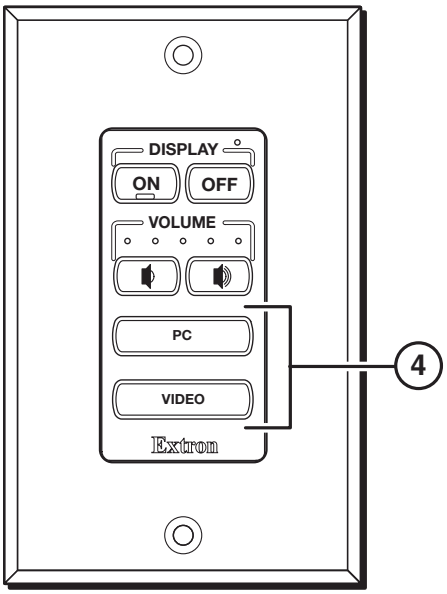


Figure 7. MLC 62 IR D Front Panel

MLC 62 RS EU and MLC 62 RS MK

The MLC 62 RS EU and MLC 62 RS MK front panels contain the same buttons and indicators as the MLC 62 D models. Other connectors and controls are on the left side panel; to access these features, you must remove the MLC from the installation surface. (When the MLC is removed, the wall frame is released from the mounting surface as well, leaving the metal mounting bracket in place.). (See "**Accessing the MLC 62 RS EU and MLC 62 RS MK Side and Rear Panel Features,**" later in this section.)

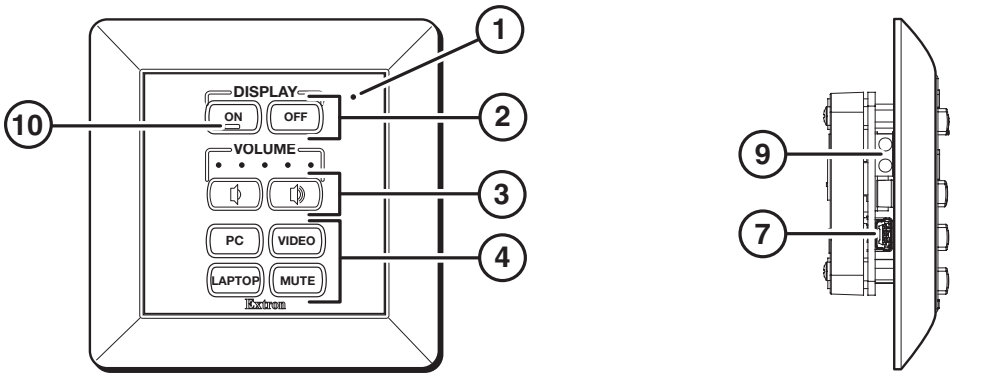


Figure 8. MLC 62 RS EU and MLC 62 RS MK Front and Side Panels

NOTE: The MLC 62 RS MK is the same size and has the same front and side panel features as the MLC 62 RS EU, with the exception of its larger wall frame, which fits over an MK electrical box.

Features

① **Activity LED** — This bicolored LED lights green when the MLC front panel buttons are pressed. It lights red while the front panel is disabled (executive mode) and blinks red while the display device is powering up and down.

② **Display power On and Off buttons** — After configuring these buttons, use them to turn the connected display device or switcher on and off. The face of the On button contains a nub, which helps you to identify the button by touch. When the On button is pressed, it blinks rapidly while the connected device is warming up. When the Off button is pressed, it blinks slowly while the device is cooling down. When this delay period has elapsed, the power button that was pressed remains brightly lit. By default, only one of these two buttons can be selected (active) at once. Using the MLC 62 configuration software, you can associate other functions and relays with each of these buttons.

③ **Volume buttons and LEDs** — Use these buttons to adjust the audio volume. Each Volume button flashes when pressed and continues to flash while being held.

The volume indicator LEDs above the buttons give indications of change to the volume level as follows:

- When the RS-232 or IR/S port has been configured with a serial driver that contains a volume table, the five LEDs light in order from left to right to show volume level increments.
- If the current driver does not contain a volume table, the first two LEDs on the left blink each time the Volume Down button is pressed, and the last two LEDs on the right blink each time the Volume Up button is pressed, indicating a volume level decrement or increment.

④ **Input selection buttons** — These buttons can be used to select the desired audio or video input for the connected device or for a variety of other functions. By default they are set up as follows:

- **RS models:** Three of these buttons are set to input mode, meaning that they are a mutually exclusive group — only one of the buttons can be selected at a time. The selected button lights brightly and remains lit when selected. All other input buttons remain dimly lit. The fourth button, labeled Mute, is set in Toggle mode and is not grouped with the others.
- **MLC 62 IR D:** Two double-sized buttons are grouped in input mode and are mutually exclusive.

This button behavior can be changed via the configuration software. See "**Setting the button modes**" in the "Software-based Configuration" section or refer to the MLC 62 configuration program help file, for more information.

⑤ **Reset LED** — Indicates the status of a reset in progress.

⑥ **Reset button** — Press this reset button to initiate factory firmware or configuration resets. (See "**Resetting the MLC 62 Using the Reset Button,**" later in this section.)

⑦ **USB configuration port** — Connect a USB cable (USB A to mini B) between your computer and this port to configure the MLC via the configuration software and to update the firmware. This port can also provide power to the MLC during configuration.

> **NOTE:** Do not use this port as the permanent power source for the MLC. It should be used for power only during button and port configuration.

- **On the MLC 62 D models**, the USB port is located at the right edge of the front panel behind the wallplate. To access this port after installation, you must remove the wallplate from the unit.
- **On the MLC 62 RS EU and MK**, the USB port is located on the left side panel. To access this port after installation, you must detach the MLC from the installation surface.

⑧ **DIP switches** — Reserved for future use

⑨ **IR Learning sensor** — This sensor enables the MLC to learn IR commands from the hand-held remote control of a display device or switcher. The IR-learned commands are used to create an IR driver, then configured to be played back with any button press. See "**IR Learning**," later in this section.

> **NOTE:** Before performing IR Learning to create a driver, check to see if an Extron driver exists for your device.

⑩ **On button Identification nub** — The face of the power On button contains a raised nub that helps you to identify the On button by touch when lighting is dim.

Buttons

The MLC 62 Series controllers have backlit, prelabeled buttons. The front panel button illumination provides status on what the MLC 62 is doing. The buttons are lit while the MLC has power. When a button has been pressed and is active or on, it lights brightly. While a button is inactive or off, it is lit dimly.

When buttons are grouped together, only the button that is pressed lights brightly. The other buttons in the group remain dim. (See "**Setting the button modes**" in the "Software-Based Configuration" section for information on grouping buttons.)

The buttons can be removed and replaced with buttons with different labels. They can then be configured with the functions that their labels represent. See "**Configuring the Front Panel Buttons**" in the "Software-based Configuration" section or refer to the MLC 62 configuration program help file for detailed procedures for configuring the buttons.

Each Display On/Off and input selection button can be set up to perform a sequence of several functions, which can be combinations of the following options:

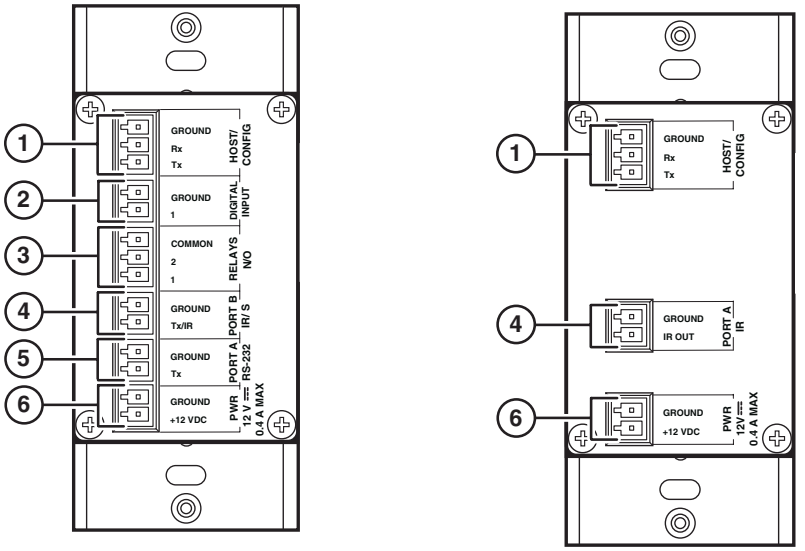
- **A driver operation** — Execute an RS-232 or IR control command that is part of a device driver (for a projector, VCR, DVD player, switcher, and so forth)
- **A relay operation** — Execute a relay command to a room device such as a motorized screen or a projector lift.
- **Setting a time delay** — Insert delays between executed commands.
- **Setting the button flashing rate** — Specify fast or slow flashing of a front panel button and the number of seconds the button flashes.

  NOTE: While a button is flashing, all front panel buttons are disabled.

- **A user-defined RS-232 operation** — Issue a non-driver-associated RS-232 command (one that you programmed separately), such as an SIS command, via the IR/S or the RS-232 port.
- **Button emulation** — Initiate a series of button functions with a single press of a button.

Rear Panel Features

See the wiring and installation sections, later in this section, for connection information.



MLC 62 RS D Rear Panel

MLC 62 IR D Rear Panel

Figure 9. MLC 62 RS D and MLC 62 IR D Rear Panels

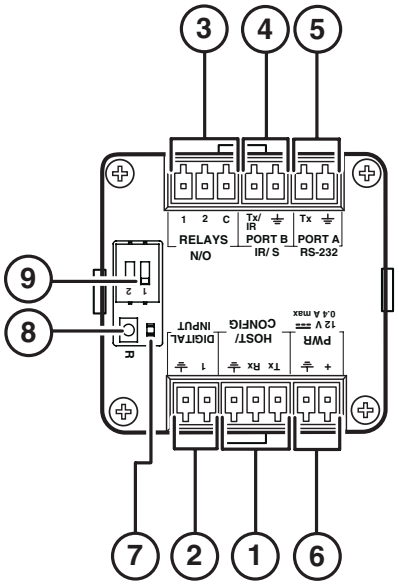


Figure 10. MLC 62 RS EU and MLC 62 RS MK Rear Panel

① **Host/Config port** — This bidirectional serial port can be used for configuration and firmware updates in the same way as the USB port (⑦ in the **"Front and Left Side Panels**" section, earlier in this section). The baud rate is 9600 bps. This RS-232 port can be used as a backup for the USB Configuration port (although you cannot power a device through it).

② **Digital Input port (RS models only)** — This port enables the MLC 62 to monitor devices such as push buttons, switches, motion sensors, and moisture sensors and provides an additional way to trigger functions on the MLC 62. Connect a switch or a sensor to this 2-pole captive screw connector to initiate commands via the MLC to the display device, switcher, or other room devices such as lights or a motorized screen.

③ **Relay ports (RS models only)** — These relays allow control of room devices such as motorized screens, lights, and projector lifts. They are normally open relays and are rated at 24 V, 1 A. Low-power devices can be connected directly to the relay ports; devices requiring more than 24 V can be connected through a third-party low-voltage controller (LVC).

④ **IR/S or IR port** — This port provides unidirectional communication to control a switcher or a display via RS-232 or IR. For IR control, one or two IR emitters can be connected with a maximum of 50 feet (15 m) distance from port to emitter.

- **RS models:** On the MLC 62 RS D, MLC 62 RS EU, and MLC 62 RS MK, this port is labeled "IR/S." It can be set up via the configuration software to send out unidirectional RS-232 (the default) or IR commands. (In the configuration software, this port is called "IR Port" or "Serial Port," depending on how it is configured.)
- **MLC 62 IR D:** On the IR-only model, this port is labeled "IR" and issues only IR commands.

⑤ **RS-232 port (RS models only)** — This serial port provides unidirectional communication to control a switcher or a display via RS-232. (In the Configuration software, this port is called "Display Port.")

⑥ **PWR (power) connector** — Connect the supplied 12 VDC, 1 A power supply (or any other power supply capable of providing 12 V, 1 A of power) to this 2-pole captive screw connector. See **page 23** for important cautions about power supplies.

Rear Panel Features on MLC RS 62 EU and MLC 62 RS MK Only

The items listed below are located on the rear panel of the MLC 62 RS EU and the MLC 62 RS MK only. On the MLC 62 D models, these items are on the front panel, behind the wallplate. (See the **previous section** for the descriptions of features ① through ⑥.)

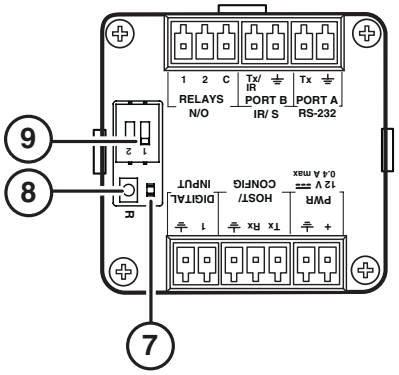


Figure 11. Features on MLC 62 RS EU and the MLC 62 RS MK Rear Panels Only

⑦ **Reset LED** — Indicates the status of a reset in progress.
⑧ **Reset button** — Press this reset button to initiate factory firmware or configuration resets. (See "**Resetting the MLC 62 Using the Reset Button**," later in this section.)
⑨ **DIP switches** — Reserved for future use

Installation

The MLC 62 D models can be installed in a standard one-gang electrical wall box or a one-gang Decora mounting bracket ("mud ring"). The MLC 62 RS EU can be installed in a one-gang EU junction box, and the MLC 62 RS MK can be installed in a one-gang MK junction box.

CAUTIONS: Installation and service must be performed by authorized personnel only. UL listed electrical boxes are recommended.

Ensure that the junction box is grounded properly.

Removing and Replacing the Faceplate

Each MLC 62 model is delivered with a faceplate (bezel) attached. This faceplate can be removed if you want to replace any of the buttons or exchange the faceplate for another.

Replacement kits containing six-button or eight-button faceplates and additional buttons can be ordered. See "**Part Numbers and Accessories**" in the "Specifications, Part Numbers, and Accessories" section or refer to the Extron Web site at **www.extron.com** for information on parts that are provided or available to order for each MLC model.

Removing and replacing the MLC 62 D faceplate

The MLC 62 D models are delivered with a black faceplate attached. If desired, you can remove this faceplate and replace it with the white one that is also provided with the product. (Matching black and white Decora wallplates are also provided.)

1. Remove the faceplate from the MLC 62 D as follows:

   a. At the center top and bottom of the faceplate are tabs, which insert into slots on the MLC main board and hold the faceplate in place.

   Insert the flat end of the provided Extron Tweeker or other small screwdriver into the hole above the tab at the top (above the word "Display") and press the tab inward and up. (See the illustration below.)

   b. Pry up the top of the faceplate and lift the faceplate off the board. If it does not come free of the board, repeat step **a** on the tab at the bottom of the faceplate.

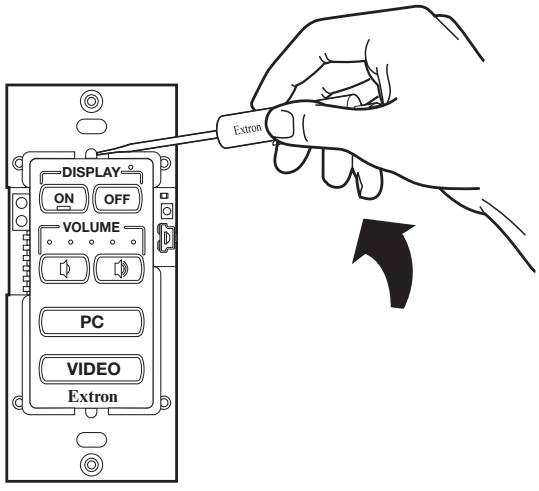


Figure 12. Removing the faceplate (MLC 62 D)

2. If you are switching faceplates, transfer the buttons from the faceplate you removed to the replacement one.
3. Make any desired button changes. (See "**Replacing Buttons**," later in this section.)

4. To attach the faceplate, line up the pegs in upper-left and lower-right corners on the back of the faceplate with the two diagonal holes on the MLC main board.
5. Press the faceplate onto the board with the pegs in the holes until the tabs at the top and bottom of the faceplate snap into their slots on the board. (See the illustration below.)

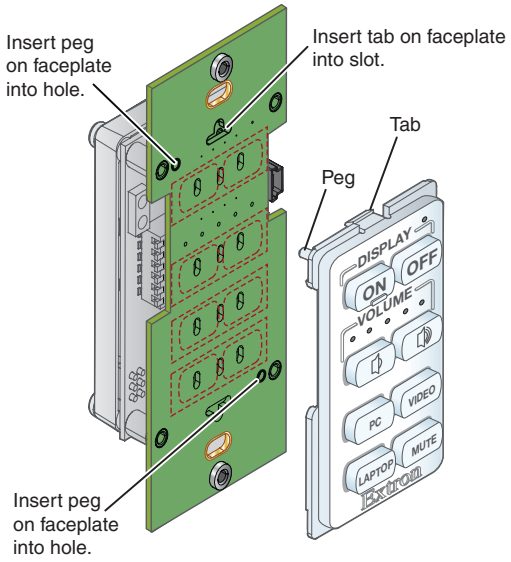


Figure 13. Attaching the Faceplate (MLC 62 D)

Removing and replacing the MLC 62 RS EU and MLC 62 RS MK faceplates

The MLC 62 RS EU and MK are each provided with an eight-button and a six-button faceplate and matching wall frame (the MLC 62 RS EU is RAL9010 white; the MLC 62 RS MK is white). However, you may want to remove the faceplate to change buttons or to replace it with a different one.

1. Remove the MLC 62 RS EU faceplate as follows:
   a. On the right and left edges of the MLC faceplate are two pairs of slots, into which two small tabs on either side of the MLC fit. Insert the flat end of the provided Extron Tweeker or other small screwdriver into one of the side slots.

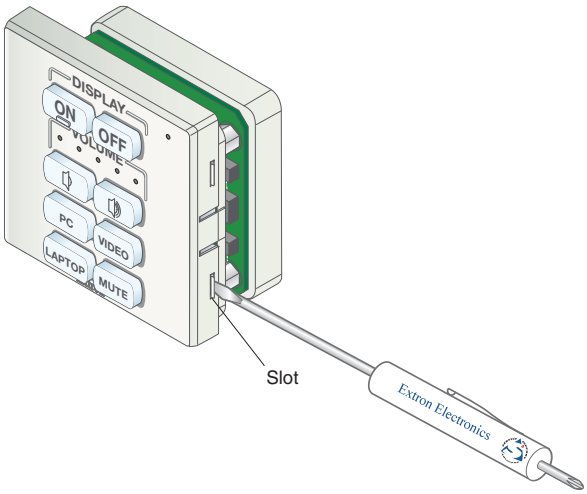


Figure 14. Removing the Faceplate (MLC 62 RS EU and MLC 62 RS MK)

b. Press inward with the screwdriver until the tab snaps free of its slot.

c. Repeat steps **a** and **b** for the other tab on the same side of the faceplate.

d. Lift the faceplate up and off the MLC. If the faceplate does not come free of the MLC, repeat steps **a** through **c** for the two tabs on the other side of the unit.

2. If you are switching faceplates, transfer the buttons from the faceplate you removed to the replacement.

3. Make any desired button replacements. (See "**Replacing Buttons**," below.)

4. Replace the faceplate as follows:

a. Hold the MLC with its board against the back of the faceplate, aligning the two tabs on each side of the unit with the two slots on each side of the faceplate.

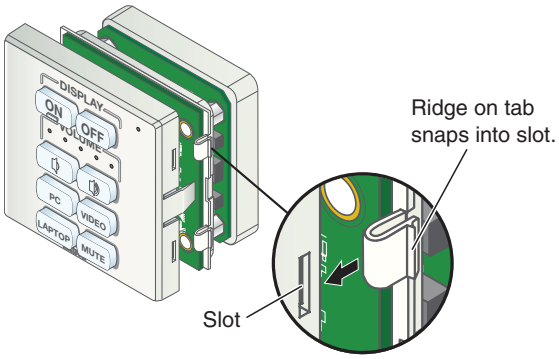


Figure 15. Replacing the Faceplate (MLC 62 RS EU)

b. Each tab has a ridge that must snap into a slot on the side of the MLC. Press the MLC into the faceplate until the tab ridges snap into their slots. Check to make sure that all four tabs are securely in place.

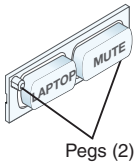
Replacing Buttons

Additional labeled buttons are provided with the MLC 62 and are available to order. These buttons can be used to replace the factory-installed buttons in the MLC faceplate. By default, all MLC 62 RS models are delivered with faceplates containing four pairs of buttons. The MLC 62 IR D has two pairs of single-sized buttons and two double-sized buttons. Each pair (row) of single-sized buttons is embedded in a membrane. The entire membrane is removed, so that the buttons are replaced in pairs. To replace buttons on the MLC 62:

1. Remove the faceplate from the MLC. (See "**Removing and Replacing the Faceplate**," earlier in this section.)

2. From the front of the faceplate, press the button pair to be replaced backward through its slots in the faceplate until the membrane containing the two buttons is free.

3. On the back of the faceplate, place the new pair of buttons through the two slots in which they will be installed. Line up the two pegs in the upper-left and lower-right corners of the new button membrane (see the illustration at right) with the holes located at opposite corners of the empty pair of slots in the faceplate.



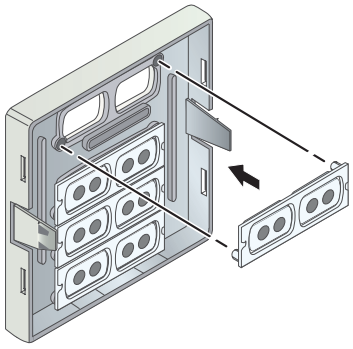


Figure 16. Replacing a Button Pair

4. Press the two buttons into the faceplate until the pegs on the membrane are seated in the corresponding holes.
5. Repeat steps **2** through **4** for any additional buttons that you want to replace, then reattach the faceplate.

Wiring for RS-232 Control (RS Models Only)

The MLC 62 RS D, MLC 62 RS EU, and MLC 62 RS MK can send out RS-232 commands through the IR/S or the RS-232 port to control a display device or switcher that is connected to the port.

Connecting to the RS-232 port

The RS-232 port is a unidirectional serial port to which you can connect a display device or switcher for control via RS-232 as follows:

NOTE: In the configuration software, this port is called the "Display Port."

1. Connect the Rx pin on the display device or switcher to the Tx pin of the RS-232 port.
2. Connect the ground pin of the output device to the MLC Ground pin.

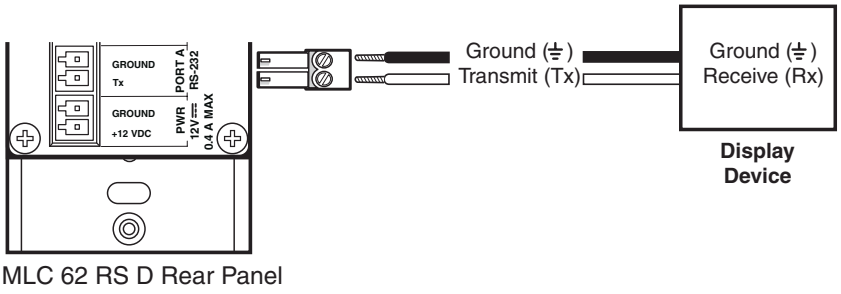


Figure 17. Connecting a Display Device to the RS-232 Port of an MLC 62 RS D

Refer to the communication sheets for your device drivers for information on compatible baud rates and cabling type and distance. These communication sheets are accessed via the MLC 62 configuration software and also on the Extron Web page at **www.extron.com**, **Download** tab. See "**Obtaining Device Drivers**" in the "Software-based Configuration" section or refer to the configuration program help file to view the communication sheets and download the device drivers.

Connecting to the IR/S port

This port can be used for either IR or RS-232 unidirectional communication. To control a display device or switcher via RS-232 from this port, connect the device as follows:

NOTE: In the configuration software, this port is called "IR Port" or "Serial Port," depending on how you have configured it.

1. Connect the Rx pin on the display device or switcher to the Tx/IR pin of the IR/S port.
2. Connect the ground pin of the output device to the MLC Ground pin.

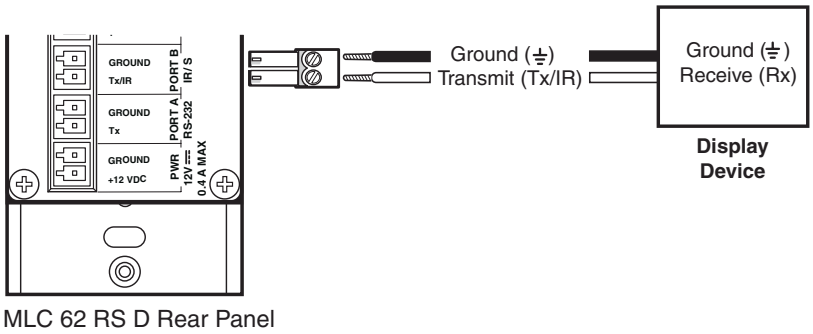


Figure 18. Connecting a Display Device to the IR/S Port of an MLC 62 RS D

Wiring for IR Control

To control devices via infrared (IR) commands from the MLC 62, connect one or two IR emitters to the IR/S port (RS models) or the IR port (MLC 62 IR D). The IR and IR/S ports provide unidirectional IR signal output to control a display, projector, switcher, or other device such as a VCR or DVD player.

You can connect one or two single IR emitters or one dual IR emitter to the IR or IR/S port to control one or two devices. Because the MLC captive screw plugs have small openings that accept just one wire per pole, to connect two IR emitters to the MLC, insert one ground wire (black) and one IR signal wire (black with a white stripe) in the MLC IR or IR/S port, then connect the IR emitters to those wires, as shown below.

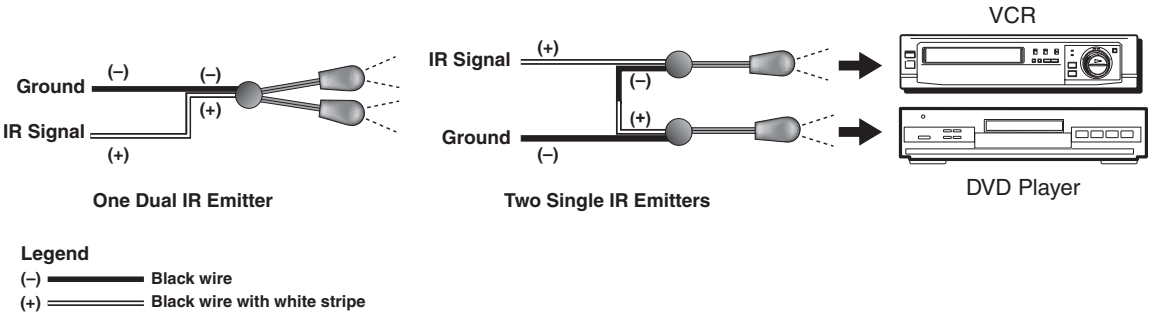


Figure 19. IR emitters for the MLC 62

For IR control, there can be a maximum of 50 feet (15 m) between the IR or IR/S port and the IR emitters.

Example: The illustration below shows a single IR emitter connected to the IR/S port of an MLC 62 RS D.

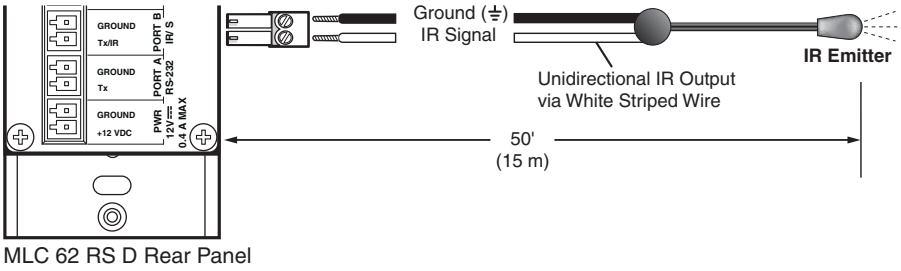


Figure 20. Connecting an IR Emitter to the IR/S Port of an MLC 62 RS D

Wiring the Relays Port (RS Models Only)

Connect one or two devices such as room lights, a projector lift, or a motorized screen (shown in the example on the next page) to the Relays port. This port accommodates two relay connections.

To connect a device to one of the relay ports:

1. Connect the ground wires of the device to pin 3 of the provided 3-pin captive screw connector.
2. Connect the signal wire of the device to pin 1 or 2 of the 3-pin connector.
3. Plug the 3-pin connector into the MLC 3-pole captive screw Relays port.

To connect devices to **both** relay ports:

1. Connect the ground wires of **both** devices to pin 3 of the provided 3-pin captive screw connector.
2. Connect the signal wire of one device to pin 2 and the other device to pin 1 of the 3-pin connector.
3. Plug the 3-pin connector into the MLC 3-pole captive screw Relays port.

Example: In the illustration below, a low-voltage controller connected to a motorized screen has been wired to pins 2 and 3 of the provided 3-pin captive screw plug. When this connector is plugged into the rear panel Relays port, the device will be connected to the MLC relay port 2 (pins 2 and Common of the MLC 3-pole Relays connector).

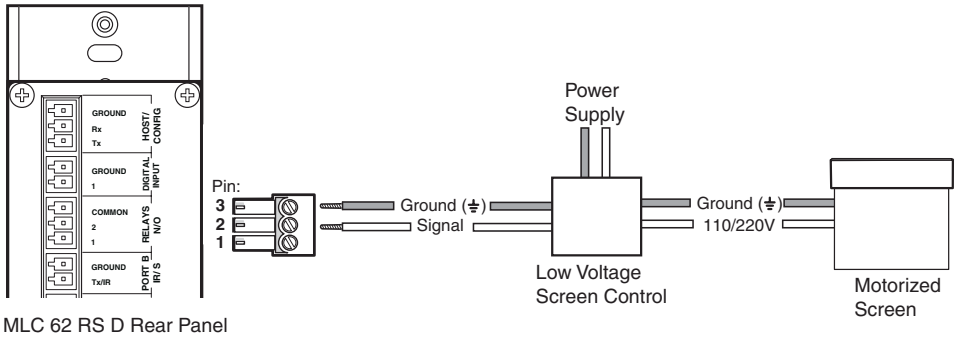


Figure 21. Connecting a Motorized Screen to the Relay Port of an MLC 62 RS D

To define the operation of a relay and associate it with a button or a digital input, use the configuration software. (See "**Adding relays to buttons**" or "**Configuring the Digital Input Port**" in the "Software-based Configuration" section, or refer to the configuration software help for setup procedures.)

Wiring the Digital Input Port (RS Models Only)

The Digital Input port on the MLC 62 rear panel lets you connect a switch or sensor to control other devices in the room that are connected to the MLC serial, IR, and relay ports. This port measures two states — high and low — of the connection between the switch or sensor and the connected device. The port accepts 0 to 24 VDC input. The threshold voltages are as follows: a voltage below 1.0 VDC is measured as logic **low**, and a voltage above 1.5 VDC is measured as logic **high**.

There is also an internal, +5 VDC, selectable, pull-up resistor for this circuit. If a connected device does not have its own power source and will be powered through the controller, configure this port (via the MLC 62 configuration software) with **Input with Pullup** as the digital input mode. If the connected device provides its own power, select **Input** for the digital input mode. (See "**Assigning commands to the Digital Input port**" in the "Software-based Configuration" section or refer to the MLC 62 configuration program help file to select the digital input mode.)

In addition, you can program actions on this port, so that each time a high or low state is detected, one or more functions are performed. An example of this is front panel lockout, or executive mode. (See "**Locking the front panel from the Digital Input port**" or refer to the configuration software help file to configure the Digital Input port.

Example: The diagram below shows a two-position switch connected to the MLC Digital Input port.

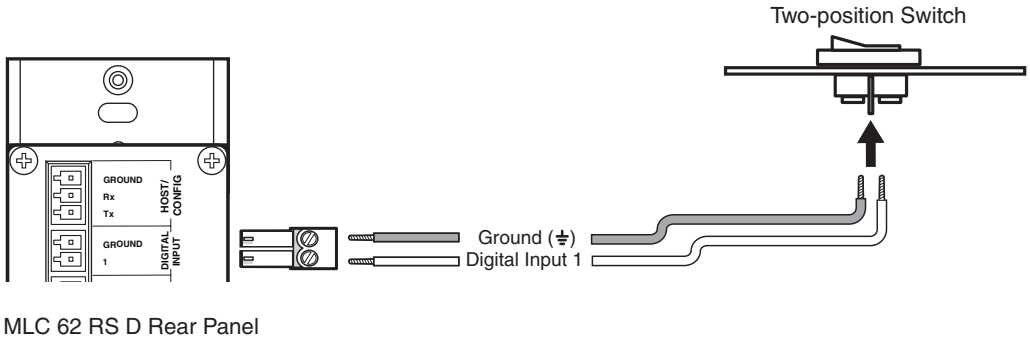


Figure 22. Connecting a Two-position Switch to the Digital Input Port

Wiring the Host/Config Port

The Host/Config port provides an alternative connection by which the MLC 62 can be configured and controlled from a host device or computer. (The primary means of configuring the MLC is through the USB port; see "**Configuring the MLC via the USB Port**," later in this section.) In addition, SIS commands can be issued through this port from the computer to control the MLC (see the "**SIS Control**" section).

The RS-232 protocol for this connection is 9600 baud, 1 stop bit, no parity, 8 data bits, no flow control.

Use a female 9-pin to bare wire RS-232 cable or a universal control cable (UC 50', UC 100', or UC 200') to connect a Windows-based PC or an RS-232 control system to the MLC via this 3-pole, 3.5 mm captive screw connector as follows:

1. Wire the RS-232 cable to one of the 3-pin captive screw plugs provided with the MLC 62, as follows:
   - Receive wire to pin 1, which plugs into the Tx (transmit) port
   - Transmit wire to pin 2, which plugs into the Rx (receive) port
   - Ground wire to pin 3, which plugs into the ⏚ (ground) port

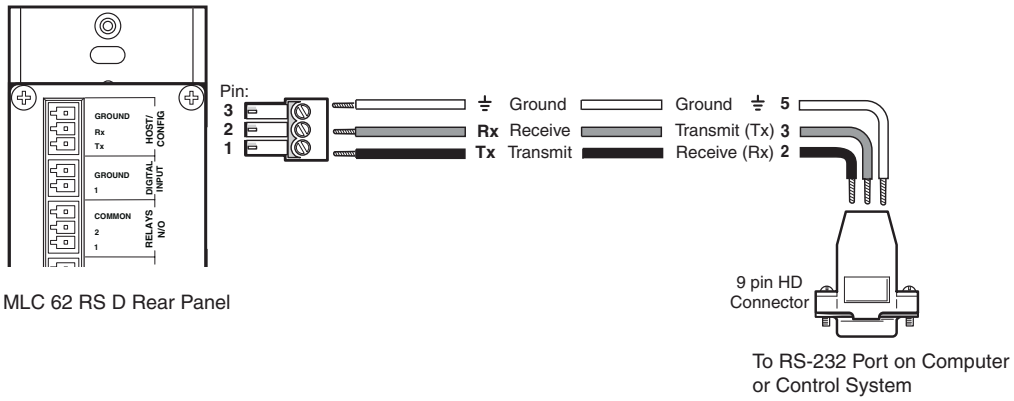


Figure 23. Connecting a Host Computer or Control System to the Host/Config Port

2. Plug the 3-pin connector into the Host/Config port on the MLC rear panel.

Connecting Power to the MLC 62

Connect the provided 12 VDC, 1 A power supply to the MLC 62 as follows:

1. Wire one of the supplied 2-pin captive screw connectors as shown below.

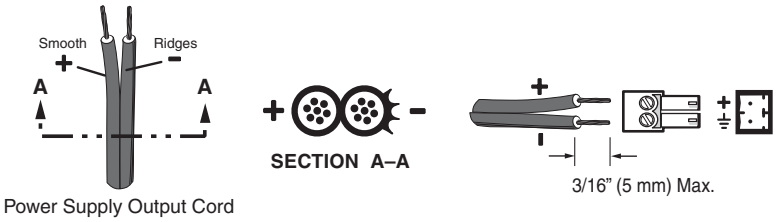


Figure 24. Wiring the Power Connector

2. Plug the connector into the rear panel PWR connector as shown below.

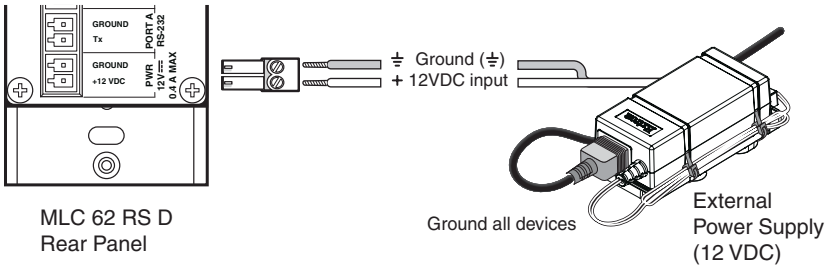


Figure 25. Connecting a Power Supply to an MLC 62 RS D

CAUTIONS: The power supply must not be permanently fixed to the building structure or similar structures.

The power supply must not be located within environmental air handling spaces or the wall cavity.

The installation must be in accordance with the applicable provisions of the *National Electrical Code ANSI/NFPA 70, Article 725* and the *Canadian Electrical Code, Part 1, Section 16*.

The power supply must be located within the same vicinity as the Extron A/V processing equipment in an ordinary location, Pollution Degree 2, secured to a podium, a desk, or an equipment rack within a dedicated closet.

Always use a power supply specified by Extron for the MLC 62. Use of an unauthorized power supply voids all regulatory compliance certification and may cause damage to the supply and the MLC.

Configuring the MLC 62 via the USB Port

The mini-Type B USB port can be used to configure the MLC via the configuration software and to update the firmware. This USB port also functions as a power source for the MLC during configuration.

NOTE: Do not use this port as the permanent power source for the MLC. It should be used for power only during button and port configuration.

1. If the MLC has already been installed, access the USB port as follows:
   - **MLC 62 D:** Remove the wallplate from the unit to access the USB port, which is located on the front panel behind the wallplate. (See "**Accessing the Covered MLC 62 D Front Panel Features**," later in this section).
   - **MLC 62 RS EU and MK:** Remove the MLC from the installation surface to access the USB port, which is located on the left side panel. (See "**Accessing MLC 62 RS EU and MK Side and Rear Panel Features**," later in this section).
2. Connect a USB A to mini B cable between the USB configuration port and the USB port on your computer.

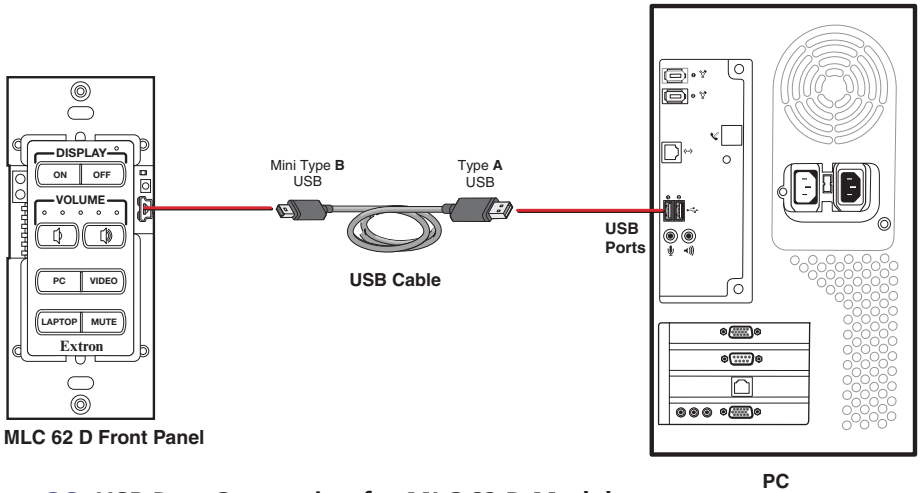


Figure 26. USB Port Connection for MLC 62 D Models

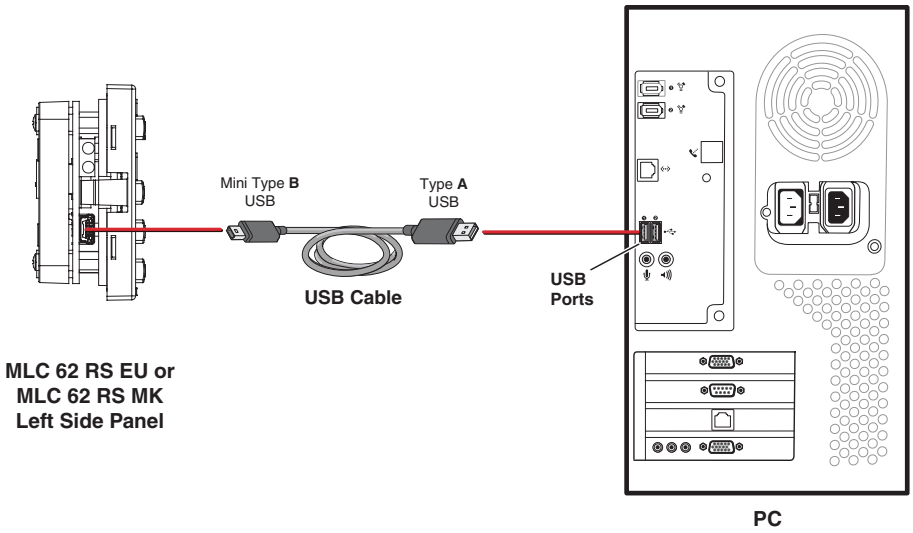


Figure 27. USB Port Connection for MLC 62 RS EU and MLC 62 RS MK

3. If this is the first time you have connected an MLC 62 to this USB port on your computer, the Found New Hardware Wizard opens. On the first screen, you can specify whether you want the computer to connect to Windows Update in order to search the Web for the driver that it needs to communicate with the MLC via the USB port. (This is not necessary if the USB driver already exists on your computer.)

Found New Hardware Wizard
Welcome to the Found New Hardware Wizard
Windows will search for current and updated software by looking on your computer, on the hardware installation CD, or on the Windows Update Web site (with your permission).
Read our privacy policy
Can Windows connect to Windows Update to search for software?
Yes, this time only
Yes, now and every time I connect a device
No, not this time
Click Next to continue.
< Back
Next >
Cancel

Figure 28. Found New Hard Wizard Opening Screen

- Select the **Yes, this time only** radio button if you want your computer to connect to Windows Update only this one time.
- Select **Yes, now and every time I connect a device** if you want the computer to automatically connect to Windows Update to search the Web every time the MLC is connected to this USB port.
- Select **No, not this time** if you do not want the computer to connect to Windows Update to search the Web (for example, if the driver is already present on your computer).

4. Click **Next**. On the next screen, make sure that the **Install the software automatically (Recommended)** radio button is selected, then click **Next**. (You do not need to insert a disk.)

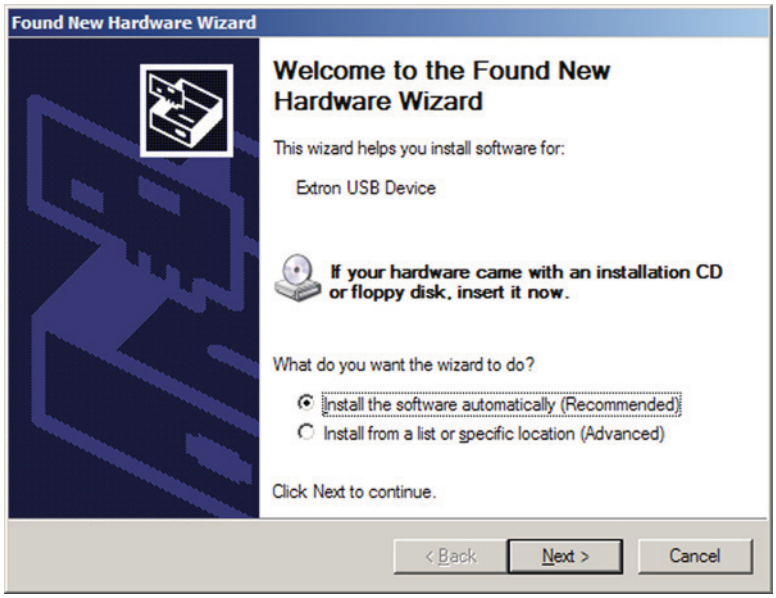

Found New Hardware Wizard
Welcome to the Found New Hardware Wizard
This wizard helps you install software for:
Extron USB Device
If your hardware came with an installation CD or floppy disk, insert it now.
What do you want the wizard to do?
Install the software automatically (Recommended)
Install from a list or specific location (Advanced)
Click Next to continue.
< Back
Next >
Cancel

Figure 29. Selecting the Radio Button to Install the USB Driver Automatically

Your computer locates the driver needed for it to communicate with the MLC 62 via the USB port. This driver is loaded to the computer hard drive when the MLC 62 configuration program is installed.

5. When the Completed screen appears, click **Finish** to close the wizard.

> **NOTE:** This wizard appears only the **first** time you connect the MLC to each USB port. You do not see the wizard again unless you connect the MLC to a different USB port on your computer.

6. Configure the MLC ports and buttons as desired, using the MLC 62 configuration program. See the "**Software-based Configuration**" section or refer to the configuration software help file for information on these procedures.
7. When finished configuring, disconnect the USB cable from the MLC, and replace the faceplate or return the MLC to its position in the installation surface.

> **NOTES:** Unlike the rear panel Host/Config port, which can also be used to configure the MLC, the cable to the USB port cannot remain connected when the MLC 62 RS EU or MLC 62 RS MK is mounted, or when the MLC 62 D wallplate is attached.
>
> If you want to upload a new configuration via USB after the MLC has been mounted, you must detach the MLC 62 D wallplate or remove the MLC 62 RS EU or MLC 62 RS MK unit from the installation surface. See "**Accessing Covered Panel Features after Mounting**," later in this section, for the procedures.

Mounting the MLC 62

When the system has been cabled, configured, and tested, the MLC can be installed in the wall or furniture.

Mounting the MLC 62 D

You can mount the MLC 62 D to a UL-approved electrical junction box or to a Decora mounting bracket (included).

Mounting to an electrical junction box

CAUTION: Ensure that the junction box is grounded properly.

1. Mount the electrical junction box in the wall or furniture, following the directions provided with the box.
2. Configure the MLC front panel buttons and switch the faceplate if desired.
3. Connect all cables and disconnect power from all devices at the source.
4. Insert the MLC unit into the mounted electrical box.
5. Secure the MLC to the box using two of the provided screws in the slots at the top and bottom of the unit.
6. Fasten the Decora wallplate onto the unit using two of the provided screws in the holes at the top and bottom.

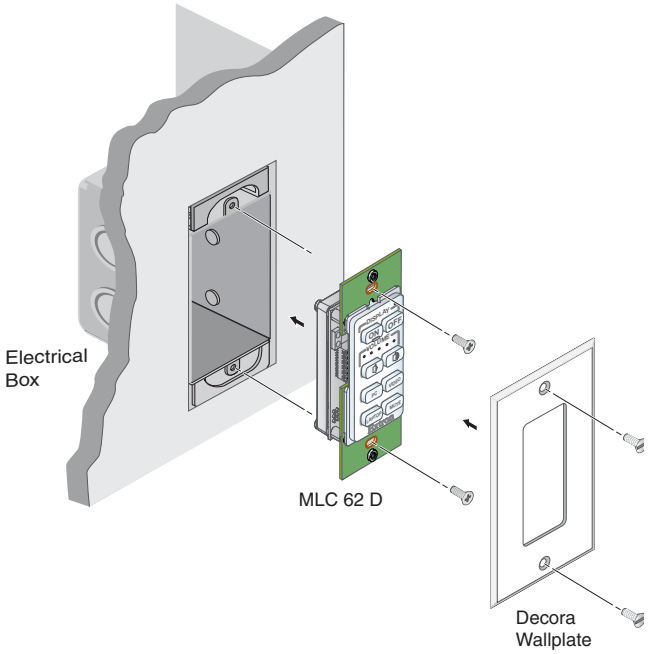


Figure 30. Mounting the MLC 62 D in an Electrical Junction Box

Mounting to a Decora Mounting Bracket

A one-gang, Decora style mounting bracket ("mud ring") is provided with the MLC 62 D models. If desired, you can mount the MLC to this type of bracket instead of to an electrical box. To mount the controller to a Decora style mounting bracket, follow these steps.

1. Cut a hole in the mounting surface large enough to accommodate the provided one-gang mounting bracket.
2. Insert the mounting bracket into the hole.
3. Turn the two screws on the bracket so that the locking arms rotate behind the mounting surface until they clamp securely to it. Do not overtighten.
4. Place the MLC 62 D onto the bracket so that the oval screw holes at the top and bottom of the MLC line up with the oval holes at the top and bottom of the bracket.
5. Place the wallplate onto the MLC front panel, then attach both to the bracket, using two of the provided screws in the holes at the top and bottom.

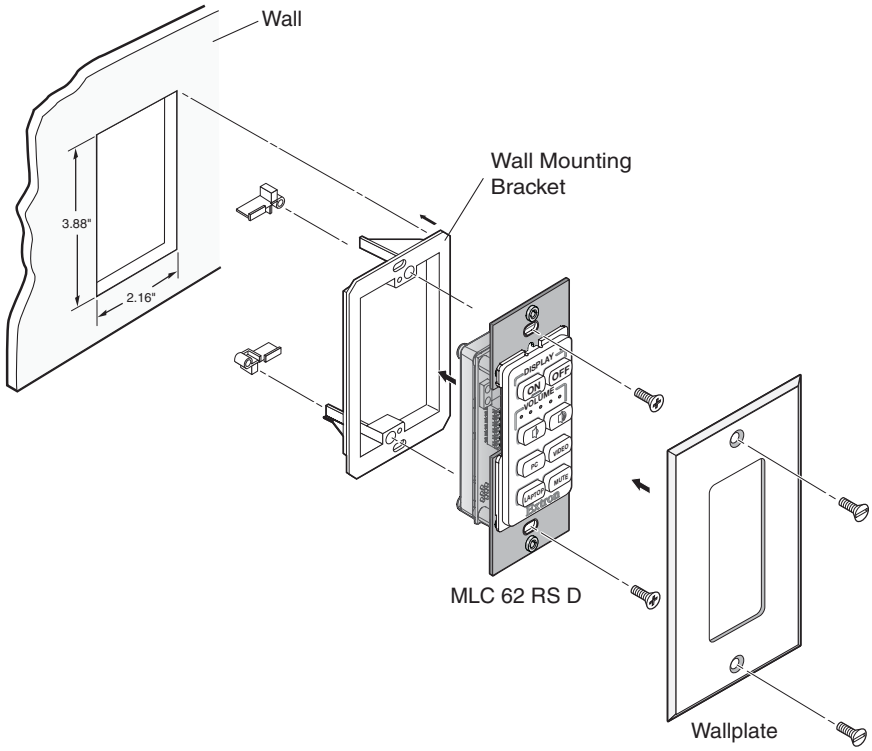


Figure 31. Mounting the MLC 62 D to a Decora Mounting Bracket

Mounting the MLC 62 RS EU and the MLC 62 RS MK

CAUTION: Ensure that the junction box is grounded properly.

To mount the MLC 62 RS EU and MLC 62 RS MK to an electrical box:

1. Attach the provided metal mounting bracket to the mounted electrical box using two of the included screws in the slots at the top and bottom of the bracket.

   NOTE: To keep the MLC securely in place and prevent it from being easily pulled from its mounting surface, ensure that the side of the bracket with the word "Front" engraved on it faces **out** (away from the electrical box).

   If you want to be able to remove the MLC easily from its mounting, attach the mounting bracket with "Front" facing inward, toward the junction box.

2. Pull the cables through the electrical box and the plastic wall frame.
3. Connect all cables to the MLC and disconnect power from all devices at the source.
4. Align the wall frame to the metal mounting bracket on the mounting surface.
5. Holding the wall frame in place on the bracket, press the MLC into the frame until the unit snaps into place.

See the **illustrations below and** **on the next page**.

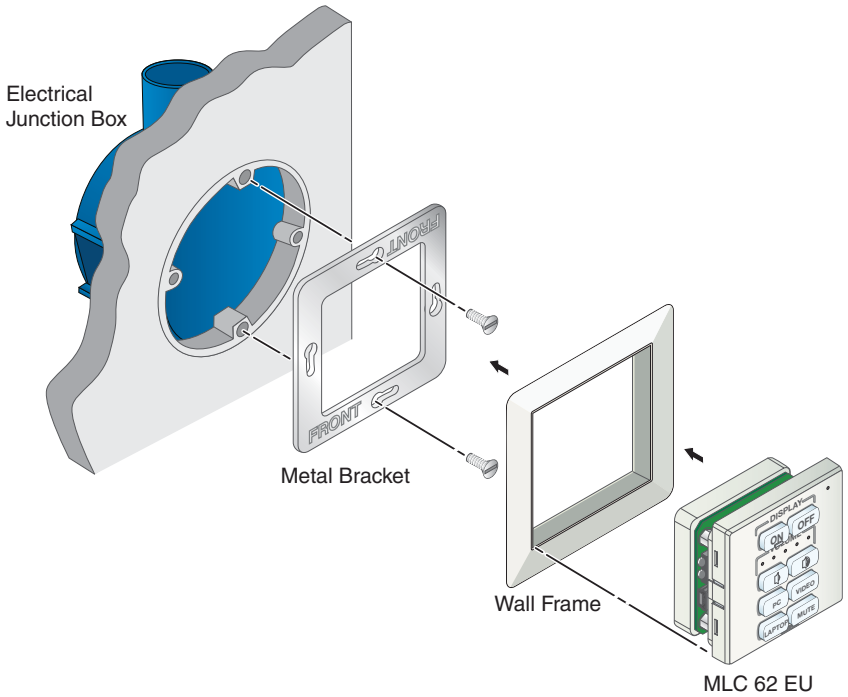


Figure 32. Mounting the MLC 62 RS EU to an Electrical Box

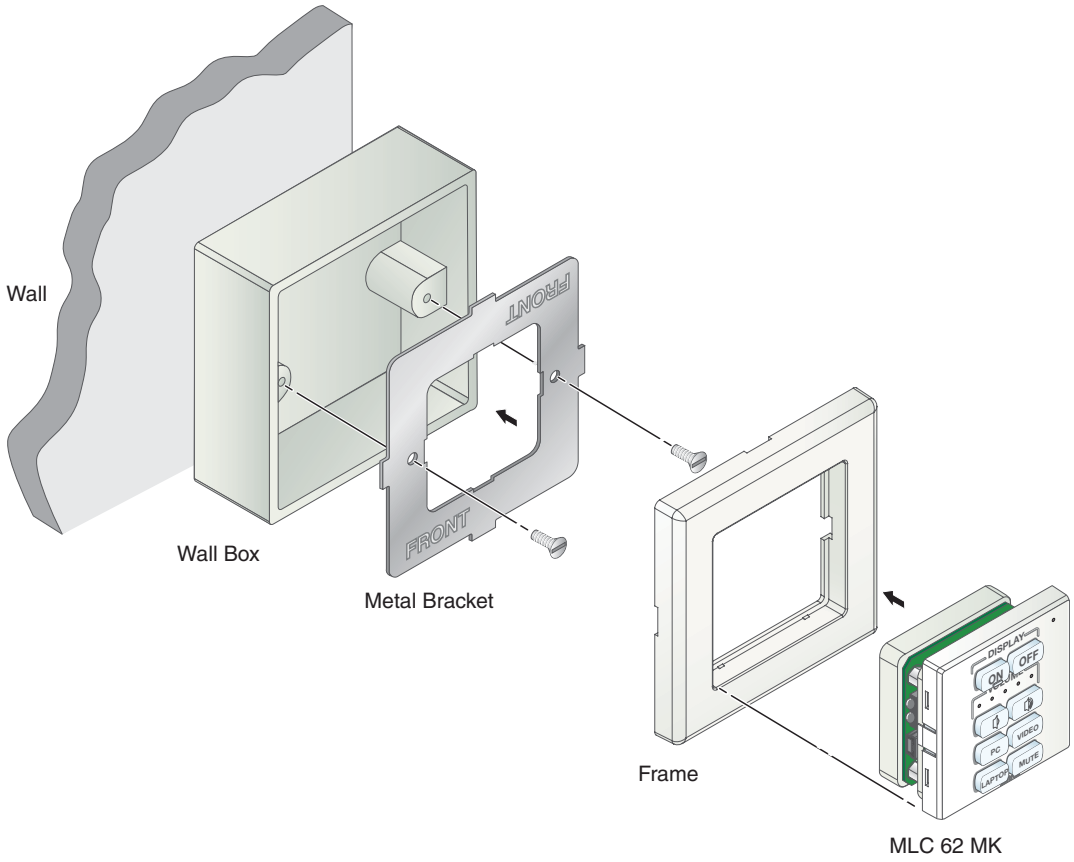


Figure 33. Mounting the MLC 62 RS MK to an External Electrical Box

Mounting the MLC 62 EU in a Raceway Using Spacers (Optional)

If you are experiencing difficulty with the MLC 62 EU staying in place when installed in a cable raceway, this may be due to a gap between the metal mounting bracket and the wall frame.

When this gap exists, the tabs on the sides of the MLC do not reach the metal mounting bracket and the MLC does not snap completely into the wall frame.

You can remedy this situation by installing a spacer (provided with the MLC 62 EU) between the metal mounting bracket and the rim of the junction box. This spacer appears very similar to the metal mounting bracket, except that it has holes instead of slots for the mounting screws, it is engraved with the words "Optional Spacer" and "Place behind bracket," and has a slightly larger center opening than the mounting bracket.

NOTE: Do not attempt to use the spacer in place of the metal mounting bracket. Because of its larger opening, the spacer will not hold the MLC 62 EU in place in the wall frame.

To mount the MLC 62 EU to a raceway using the spacer:

1. Mount the electrical box in the raceway.
2. Attach the spacer to the electrical box using two of the included screws in the holes at the top and bottom of the spacer. Leave the screw heads protruding approximately 1/8 inch from the surface of the spacer.

3. With the "Front" label toward you, place the metal mounting bracket onto the spacer so that the screw heads pass through two of the slotted holes in opposite sides of the bracket.

> **NOTE:** Ensure that the surface of the mounting bracket containing the word "Front" is facing **out** (away from the spacer and junction box).

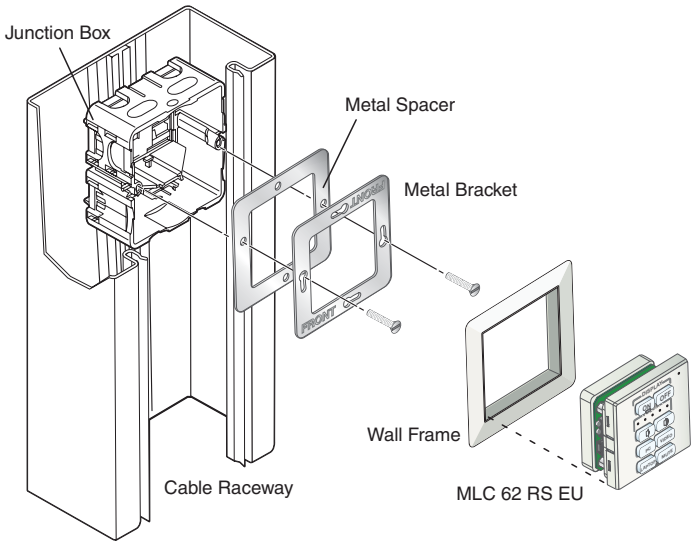
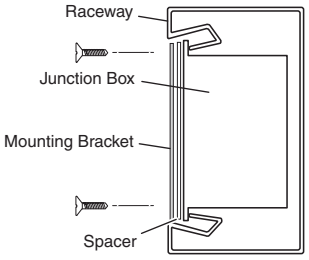


Figure 34. Mounting the MLC 62 RS EU Using a Spacer

4. Rotate the mounting bracket as necessary to ensure that the MLC will be positioned straight on the mounting surface and not skewed to either side.
5. Tighten the screws to secure the bracket to the spacer.
6. Pull the cables through the electrical box and the wall frame.
7. Disconnect power from all devices at the source and connect all cables to the MLC.



8. Align the wall frame with the metal mounting bracket on the mounting surface.
9. Press the MLC into the frame until the unit snaps into place.

Accessing Covered Panel Features After Mounting

After the MLC is installed in the mounting surface, you can still access the covered front panel features on the MLC 62 D and the side and rear panel features on the MLC 62 RS EU and MLC 62 RS MK, using the following procedures.

Accessing the Covered MLC 62 D Front Panel Features

After the MLC 62 D is mounted, the following front panel items are covered by the wallplate: IR sensor, DIP switches, Reset button, and USB connector. To access these controls, remove the two screws at the top and bottom of the wallplate and lift it off the MLC, as shown on the next page.

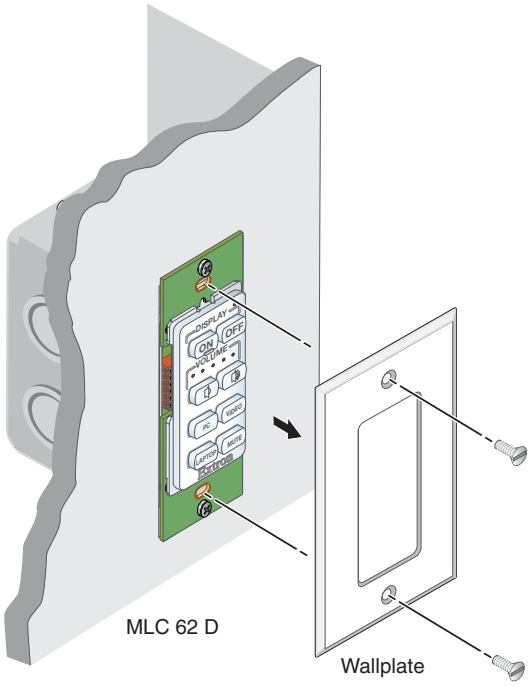


Figure 35. Removing the MLC 62 D Wallplate

Accessing MLC 62 RS EU and MLC 62 RS MK Side and Rear Panel Features

To access the MLC 62 RS EU or MK side and rear panel features after the MLC has been mounted, you must remove the MLC from the installation surface, leaving the metal mounting bracket attached. (Without the MLC unit to hold it in place, the wall frame also is removed.)

To remove the MLC from the mounting surface:

1. Insert the flat tip of the provided Extron Tweeker (or other small, flat-headed screwdriver) in the center of the right or left edge of the MLC, between the MLC and the wall frame.
2. Press the screwdriver head inward to release the tab holding the MLC in place in the wall frame. (See the illustration below.)

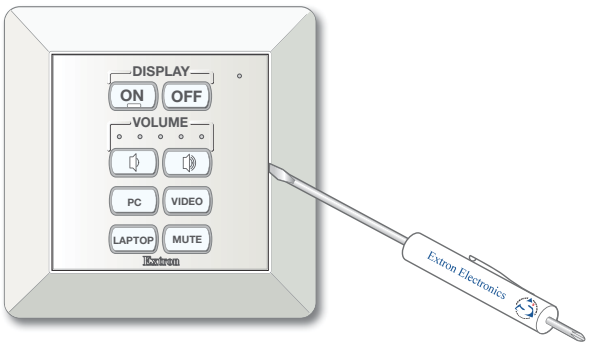


Figure 36. Pressing the Release Tab to Remove the MLC from the Mounting Surface

3. Pry the MLC upward until it is free of the installation surface, then lift the unit out.

To reinstall the MLC, place it in the wall frame, then press the unit into the metal mounting bracket until all four tabs snap into their slots.

Front Panel Security Lockout (Executive Mode)

To prevent accidental changes to settings, the MLC features a front panel security lockout (executive) mode for disabling access to controls. When front panel lockout is enabled, all the front panel buttons are disabled. If a button is pressed, all the buttons flash rapidly three times to indicate lockout, but no action occurs.

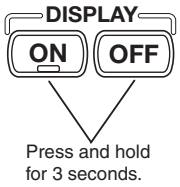
You can lock and unlock the front panel by the following methods:

- Front panel buttons
- The MLC 62 configuration software (See "**Locking the front panel from the Digital Input port**" in the "Software-based Configuration" section or refer to the MLC 62 configuration program help file.)
- SIS commands (See the **Front panel lockout (executive mode)** commands in the "SIS Control" section.)

Locking Using the Front Panel Buttons

To lock the front panel using the buttons, press and hold the On and Off (top two) buttons simultaneously for 3 seconds. All the front panel buttons flash three times rapidly, and the Activity LED lights red and remains lit while the front panel is locked.

To unlock the front panel, press and hold the On and Off buttons again for 3 seconds. All front panel buttons flash three times slowly while the Activity LED blinks green three times.



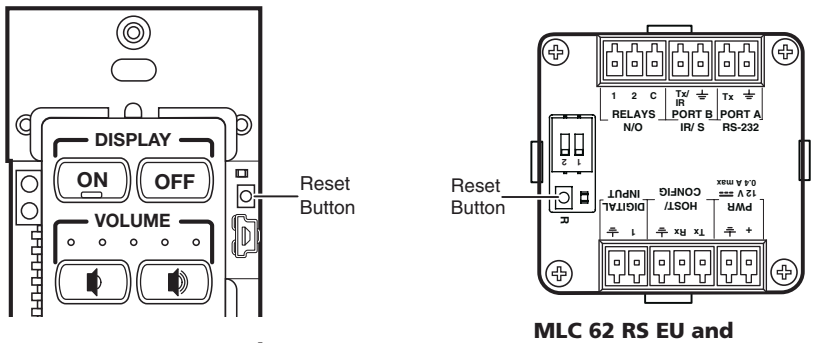
Resetting the MLC 62 Using the Reset Button

If it becomes necessary to reset the MLC 62 to its default factory firmware or to the default configuration settings that were implemented at the factory, you can use either the Reset button (see below) or the configuration software (see "**Resetting the Configuration**" in the "Software-based Configuration" section).

The Reset button is located on the front panel of the MLC 62 D behind the wallplate, and on the rear panel of the MLC 62 RS EU and MK. To access the Reset button, do one of the following, depending on your MLC model:

- Remove the wallplate from the MLC 62 D (see "**Accessing the Covered MLC 62 D Front Panel Features**," earlier in this section, **or**
- Remove the MLC 62 RS EU or MLC 62 RS MK from the installation surface (see "**Accessing MLC 62 RS EU and MLC 62 RS MK Side and Rear Panel Features**," earlier in this section).

Use the provided Extron Tweeker or other small screwdriver to press the Reset button.



MLC 62 D Front Panel

MLC 62 RS EU and MLC 62 RS MK Rear Panel

Figure 37. Reset Button Locations

You can perform two types of reset:

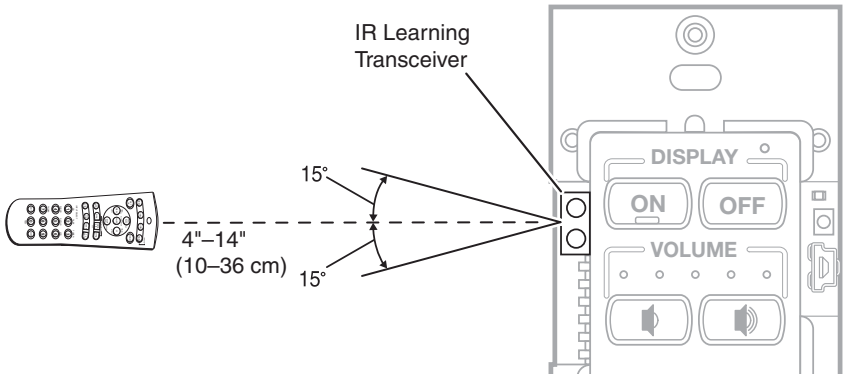
- **Resetting to the default configuration:**
  1. While the MLC is powered **on**, press and hold the Reset button. The Reset LED remains lit while the button is being held.
  2. After 3 seconds, the Reset LED blinks once. Release the button, then immediately (within 1 second) press it again and release it quickly (momentary press).

     When the reset is finished, the Reset LED blinks four times, indicating that the reset was successful.
- **Resetting to the factory firmware defaults:**
  1. With the MLC powered **off**, press and hold the Reset button.
  2. Continue to hold the button while applying power to the MLC.
  3. When the reset is complete, the front panel buttons scroll (blink in succession in clockwise order). Release the Reset button.

IR Learning

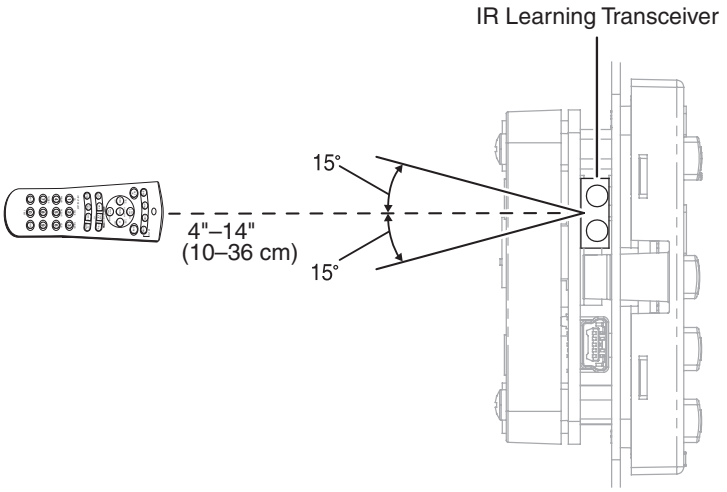
The IR learning transceiver sensor on the MLC 62 front or left side panel can receive and "learn" commands from the infrared remote controls of other devices via the MLC 62 configuration software. IR Learning enables you to create an IR driver file to control the projector or input devices such as a VCR or DVD player. IR Learning of projector control codes is necessary only if there is no driver available for your projector or if you need to customize the driver.

The IR transceiver accepts infrared signals of 30 kHz to 60 kHz. Point the IR remote control directly at the transceiver for best results. The diagrams below indicate the best distances and angles at which to hold the remote control.



MLC 62 D Front Panel

Figure 38. IR Learning on an MLC 62 D



**MLC 62 RS EU
and MLC 62 RS MK
Left Side Panel**

Figure 39. IR Learning on an MLC 62 RS EU or MLC 62 RS MK

To set up the MLC for IR Learning, see "**Configuring Using IR Learning**" in the "Software-based Configuration" section or refer to the MLC 62 configuration software help file.

Software-based Configuration

This section describes basic procedures for setting up and configuring the MLC using the MLC 62 Windows-based configuration program. For more detailed descriptions and additional procedures, refer to the MLC 62 help file, provided with your controller. The following topics are covered:

- **About the MLC 62 Configuration Program**
- **Installing the Configuration Software**
- **Obtaining Device Drivers**
- **Creating a New MLC Configuration — Getting Started**
- **Uploading a Configuration to the MLC 62**
- **Configuration File Management Procedures**
- **Resetting the Configuration**

About the MLC 62 Configuration Program

An MLC 62 Series controller must be configured before using it to control other devices. The Extron MLC 62 Configuration Program is used to configure the MLC front panel buttons and rear panel ports and to update firmware. Using this software, you can create configurations on your computer for your MLC. You then connect the computer to the MLC USB or Host/Config serial port and upload a configuration to the MLC. (The MLC does not have to be connected to the computer while you are creating the configurations.) See the "**Features, Installation, and Operation**" section for pin assignments and other details on the configuration ports.

NOTE: Extron recommends configuring and controlling the MLC via the USB port. This port can supply power to the MLC while it is being configured.

PC System Requirements

The minimum system requirements for the computer on which you install the MLC 62 configuration program include:

- Intel Pentium III 1-GHz processor
- Microsoft Windows XP SP2 and Windows 7
- Microsoft.NET Framework 2.0 or higher
- 512 MB of RAM
- 50 MB of available hard disk space

Installing the Configuration Software

The software is provided on a DVD that is delivered with your MLC 62 unit. You can also download it free from the Extron Web site.

Downloading and Installing the Software from the Web

If you do not have the software on disk, download it to your computer from the Extron Web site as follows:

1. Visit the Extron Web site at **www.extron.com** and select the **Download** tab.
2. On the Download Center screen, click the **Control Software** button. A Control Software screen is displayed, containing a list of control software products.
3. In one of the linked alphabets displayed across the top and bottom of the screen, click **M**.
4. On the "M" software products page, scroll to locate MLC 62, and click the **Download** link at the far right.

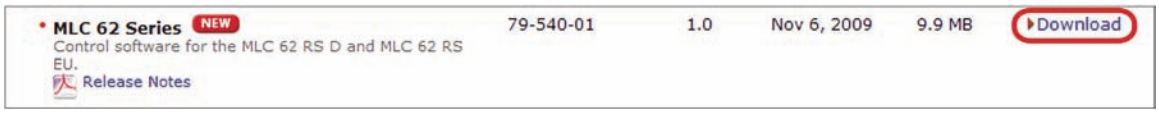


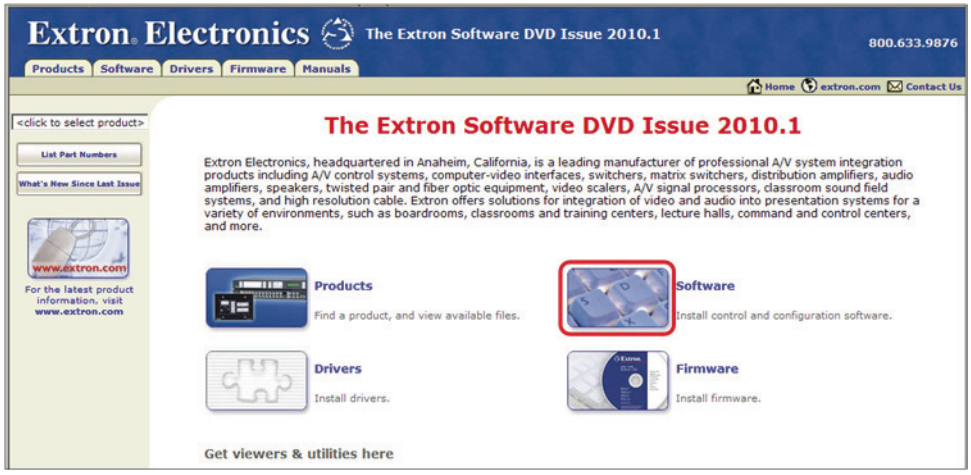
Figure 40. Download Link on the Web for the MLC 62 Configuration Software

5. On the next screen, fill in the required information.
6. Click the **Download MLC62SW*nxn*.exe** button.
7. Follow the instructions on the download screens to download the software and install it on your computer.

Installing the Software from the Disk

If you have an Extron disk containing the MLC 62 software, install it on your computer:

1. Insert the disk into your computer drive. If the disk does not start automatically, open your Windows Explorer and double-click **Launch.exe** on the disk drive to start it.
2. On the Extron software disk screen, click the **Software** button.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Extron Electronics, headquartered in Anaheim, California, is a leading manufacturer of professional A/V system integration products including A/V control systems, computer-video interfaces, switchers, matrix switchers, distribution amplifiers, audio amplifiers, speakers, twisted pair and fiber optic equipment, video scalers, A/V signal processors, classroom sound field systems, and high resolution cable. Extron offers solutions for integration of video and audio into presentation systems for a variety of environments, such as boardrooms, classrooms and training centers, lecture halls, command and control centers, and more.
Products
Find a product, and view available files.
Software
Install control and configuration software.
Drivers
Install drivers.
Firmware
Install firmware.
Get viewers & utilities here

Figure 41. Software Button on the Disk Opening Screen

3. On the Control Software screen, scroll to locate the MLC 62, and click the **Install** link in the far right column.
4. Follow the on-screen instructions to complete the installation.

Obtaining Device Drivers

The Extron drivers are control files (libraries) of commands created by Extron that are specific to a particular display device or switcher. There are different sets of drivers for serial (RS-232) and IR control. Before you can use the configuration software to configure the MLC buttons and ports, the necessary drivers must be loaded onto your computer. You must then load the appropriate driver for your device to the MLC in order to configure it to control the device.

Serial and IR drivers are available free from the Extron web site at **www.extron.com**. You can download them directly from the Web or through the configuration software. The same drivers are also provided on the software DVD provided with the MLC.

NOTES: By default,the drivers that you download are stored in the Driver2 folder on your computer, located at:

- **Windows XP** — c:\Documents and Settings\All Users\Shared Documents\ Extron\ Driver2
- **Windows 7 and Vista** — c:\Users\Public\Documents\Extron\Driver2

Downloading Drivers Using the Configuration Program

The easiest way to obtain the drivers for your devices is via the MLC 62 configuration program, as follows:

1. Click **Start > Programs > Extron Electronics > MLC 62** *or* double-click the **MLC 62 software** icon (shown at right) on your desktop to launch the MLC 62 software application. The MLC 62 Configuration Program window opens, with the Start Options window displayed in front of it.

2. On the Start Options window, click the **Add Driver Subscriptions** button.

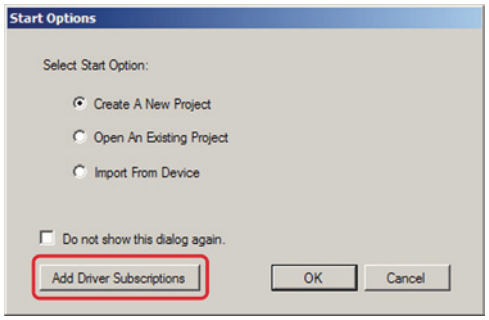


Figure 42. Start Options Window

The Driver Subscriptions window opens. In the Available Drivers Subscription field, select the device types for which you want to download drivers.

- To select all device types available from a manufacturer, select the check box in front of the manufacturer name. Each manufacturer whose drivers you select is listed in the Current Drivers Selection column.
- To select individual device types from a manufacturer, click the + sign in front of the manufacturer name to expand it and display all the device types of that manufacturer for which drivers are available, then select the desired device check box(es). To hide the devices, click the minus (–) sign.
- To expand or collapse the list of manufacturers and view or hide all their drivers, click the **Expand all** or **Collapse all** buttons at the top of either column.

NOTE: When you select a device, both the IR and serial drivers for it are downloaded.

3. Make any desired optional selections:

   - Select the **Auto-check for new subscribed drivers** check box if you want the MLC to check for and download any updates to your subscribed drivers. When a new version of any of your subscribed drivers is available on the Extron Web site, that new version is automatically downloaded when the configuration program is started.
   - Click **Set Proxy** if you want to download your drivers using proxy server settings. (Refer to the configuration software help file for more information.)

   If you want to close the window without downloading any drivers, click **Close** to save any changes you have made on this window or **Cancel** to discard your changes.

4. Click **Download**. The Driver Subscriptions Download window opens, displaying all drivers that have been selected or previously downloaded to your computer.

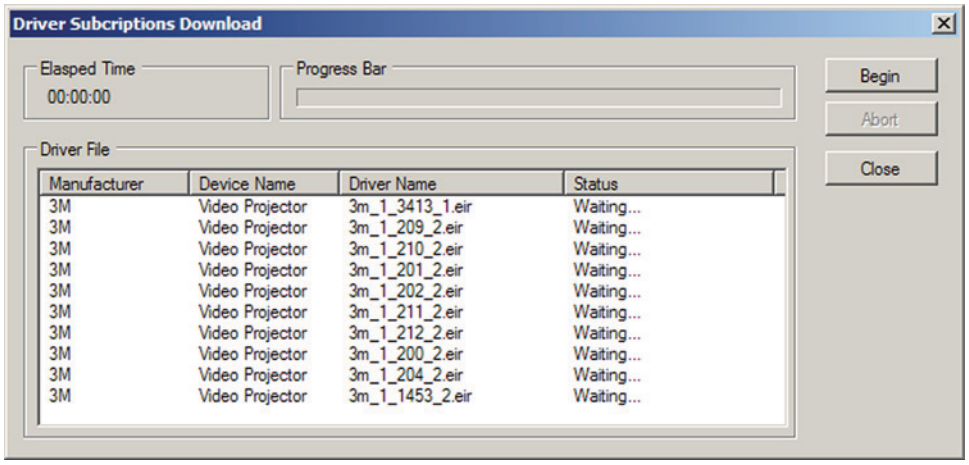


Figure 43. Driver Subscription Download Screen

   - If a driver on the list is new for your computer, it has the designation "Waiting..." in the Status column.
   - If a driver already exists on your computer, its designation is "Already in Driver Catalog."

> **NOTE:** You must have an active connection to the internet to download the drivers.

5. On the Driver Subscription Download window, click **Begin** to download the drivers listed in the Driver File section. While the download is in progress:

   - The Progress Bar indicates the progress of the download.
   - The Elapsed Time field shows the amount of time that has passed since the download process started.
   - As each new driver is downloaded, its designation in the Status column changes to "Completed."

6. When the progress bar and the Status column indicate that the download has completed, click **Close** to close the Driver Subscription Download window.

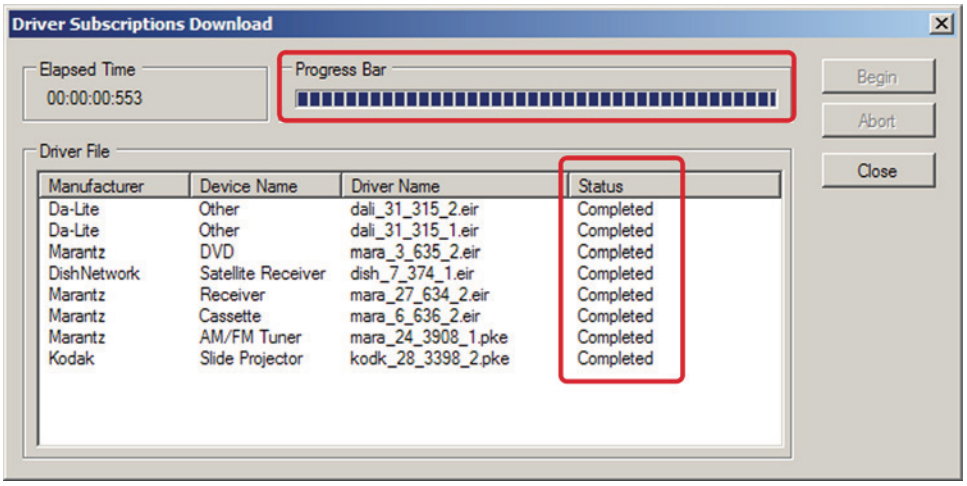


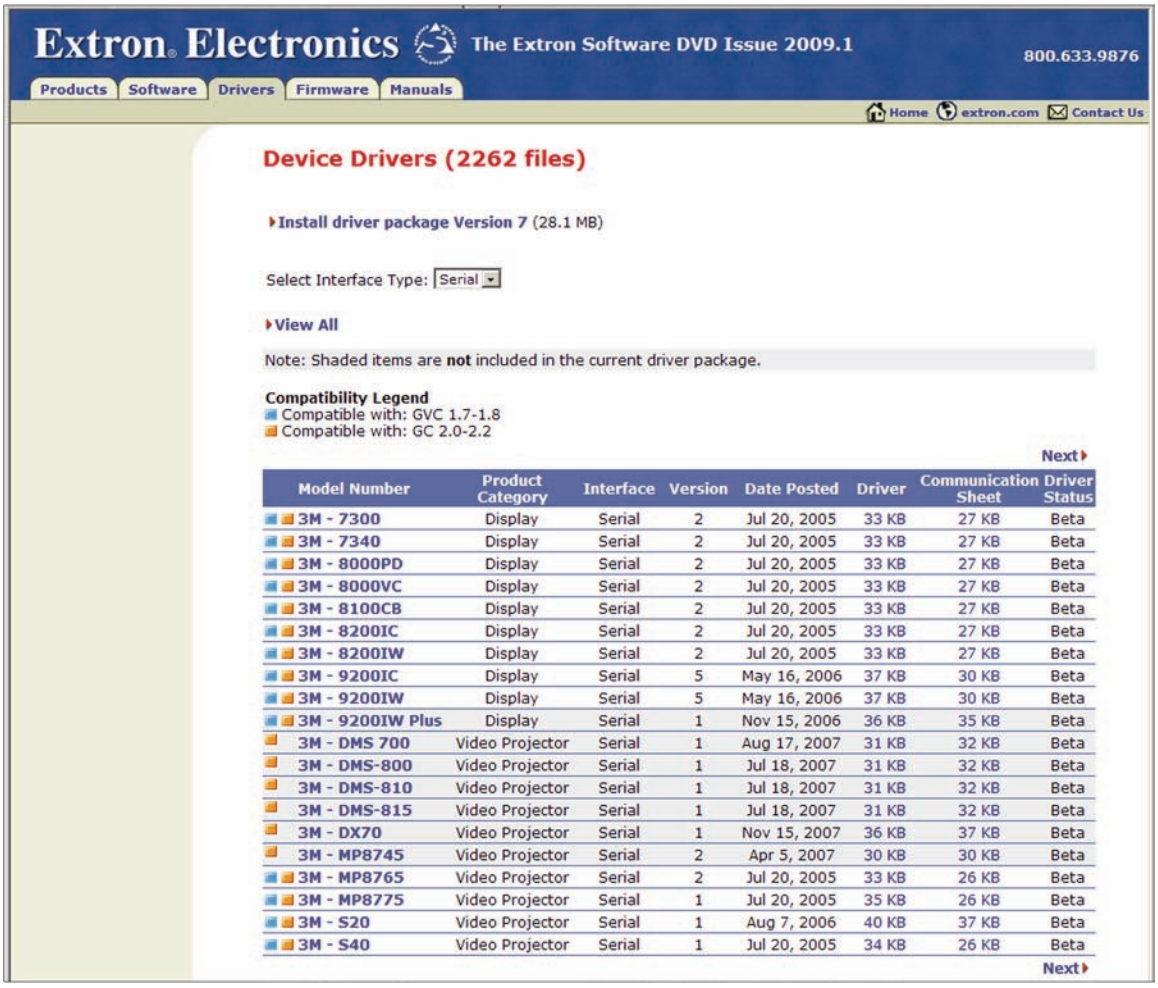
Figure 44. Driver Subscriptions Download Screen Showing a Completed Driver Download

7. Click **Close** on the Driver Subscriptions window.

Downloading Drivers from the Disk

The software DVD provided with the MLC 62 contains the set of device drivers that are also available from the Web. To load the drivers from the DVD to your computer:

1. Load the Extron Software Products DVD into your CD or DVD drive. The disk should start automatically. If it does not, open your Windows Explorer and double-click **Launch.exe** on the CD or DVD drive to start it.
2. On the opening screen, click the **Drivers** button or select the **Drivers** tab at the top of the screen.
3. On the Drivers screen, select **MLC 62 Series Device Drivers**. The MLC 62 Device Drivers screen opens.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Firmware
Manuals
Home
extron.com
Contact Us
Device Drivers (2262 files)
Install driver package Version 7 (28.1 MB)
Select Interface Type: Serial
View All
Note: Shaded items are not included in the current driver package.
Compatibility Legend
Compatible with: GVC 1.7-1.8
Compatible with: GC 2.0-2.2
Next
Model Number | Product Category | Interface | Version | Date Posted | Driver | Communication Sheet | Driver Status
3M - 7300 | Display | Serial | 2 | Jul 20, 2005 | 33 KB | 27 KB | Beta
3M - 7340 | Display | Serial | 2 | Jul 20, 2005 | 33 KB | 27 KB | Beta
3M - 8000PD | Display | Serial | 2 | Jul 20, 2005 | 33 KB | 27 KB | Beta
3M - 8000VC | Display | Serial | 2 | Jul 20, 2005 | 33 KB | 27 KB | Beta
3M - 8100CB | Display | Serial | 2 | Jul 20, 2005 | 33 KB | 27 KB | Beta
3M - 8200IC | Display | Serial | 2 | Jul 20, 2005 | 33 KB | 27 KB | Beta
3M - 8200IW | Display | Serial | 2 | Jul 20, 2005 | 33 KB | 27 KB | Beta
3M - 9200IC | Display | Serial | 5 | May 16, 2006 | 37 KB | 30 KB | Beta
3M - 9200IW | Display | Serial | 5 | May 16, 2006 | 37 KB | 30 KB | Beta
3M - 9200IW Plus | Display | Serial | 1 | Nov 15, 2006 | 36 KB | 35 KB | Beta
3M - DMS 700 | Video Projector | Serial | 1 | Aug 17, 2007 | 31 KB | 32 KB | Beta
3M - DMS-800 | Video Projector | Serial | 1 | Jul 18, 2007 | 31 KB | 32 KB | Beta
3M - DMS-810 | Video Projector | Serial | 1 | Jul 18, 2007 | 31 KB | 32 KB | Beta
3M - DMS-815 | Video Projector | Serial | 1 | Jul 18, 2007 | 31 KB | 32 KB | Beta
3M - DX70 | Video Projector | Serial | 1 | Nov 15, 2007 | 36 KB | 37 KB | Beta
3M - MP8745 | Video Projector | Serial | 2 | Apr 5, 2007 | 30 KB | 30 KB | Beta
3M - MP8765 | Video Projector | Serial | 2 | Jul 20, 2005 | 33 KB | 26 KB | Beta
3M - MP8775 | Video Projector | Serial | 1 | Jul 20, 2005 | 35 KB | 26 KB | Beta
3M - S20 | Video Projector | Serial | 1 | Aug 7, 2006 | 40 KB | 37 KB | Beta
3M - S40 | Video Projector | Serial | 1 | Jul 20, 2005 | 34 KB | 26 KB | Beta
Next

Figure 45. MLC 62 Device Drivers Web Page

4. From the DVD, you can download either the current Extron driver package (containing all IR and serial drivers that were available at the time the package was compiled) or one driver at a time.

   To download the driver package:

   a. Click **Install driver package Version *n***.

   b. Click **Run** on the File Download - Security Warning screen.

   c. Click **Run** on the Internet Explorer - Security Warning screen.

   d. Follow instructions on the Driver Install wizard screens to complete installation of the driver package. The drivers are all placed in the Driver2 folder.

NOTES: By default,the drivers that you download are stored in the Driver2 folder on your computer, located at:

- **Windows XP** — c:\Documents and Settings\All Users\Shared Documents\Extron\ Driver2
- **Windows 7 and Vista** — c:\Users\Public\Documents\Extron\Driver2

The MLC Configuration Program supports only driver package 8.1 or later.

NOTE: The DVD may contain additional drivers that became available after the current driver package was created. These new drivers may be on the DVD, but not have been incorporated into the driver package.

If you want to ensure that you are getting all the drivers currently available, use the configuration program to download the drivers. (See "**Downloading the Drivers Using the Configuration Program**," earlier in this section.)

To download a single driver:

a. (Optional) From the Select Interface Type drop-down menu, select **IR** or **Serial** for the type of drivers to view. When you make this selection, only drivers in the current driver package are displayed.

b. If you want to view all the drivers of the selected type, including those outside the current package, click **View All**.

c. To view additional pages of driver listings, click **Next**. Click **Previous** to page backward through the drivers list.

d. Right-click on the name of the desired driver. From the pop-up menu, select **Save Target As...** .

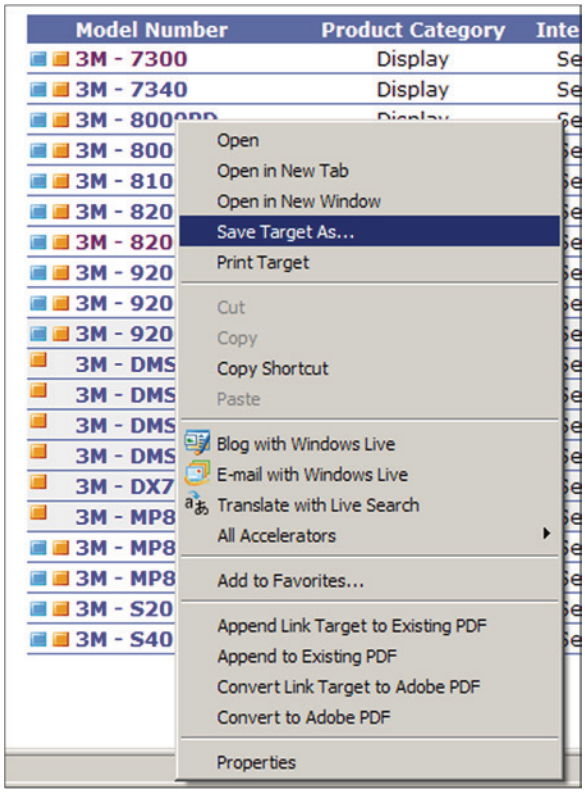


Figure 46. Saving a Single Driver to the Computer

e. On the Save window that opens, save the driver file in the Driver2 folder.

Downloading Drivers from the Web

Drivers can also be obtained directly from the Extron Web site, as follows:

1. Visit the Extron Web site at **www.extron.com**, and click the **Download** tab.
2. Click the **Device Drivers** link on the left panel of the Download Center screen.
3. From the drop-down menu on the Device Drivers screen, select **MLC 62 Series**.

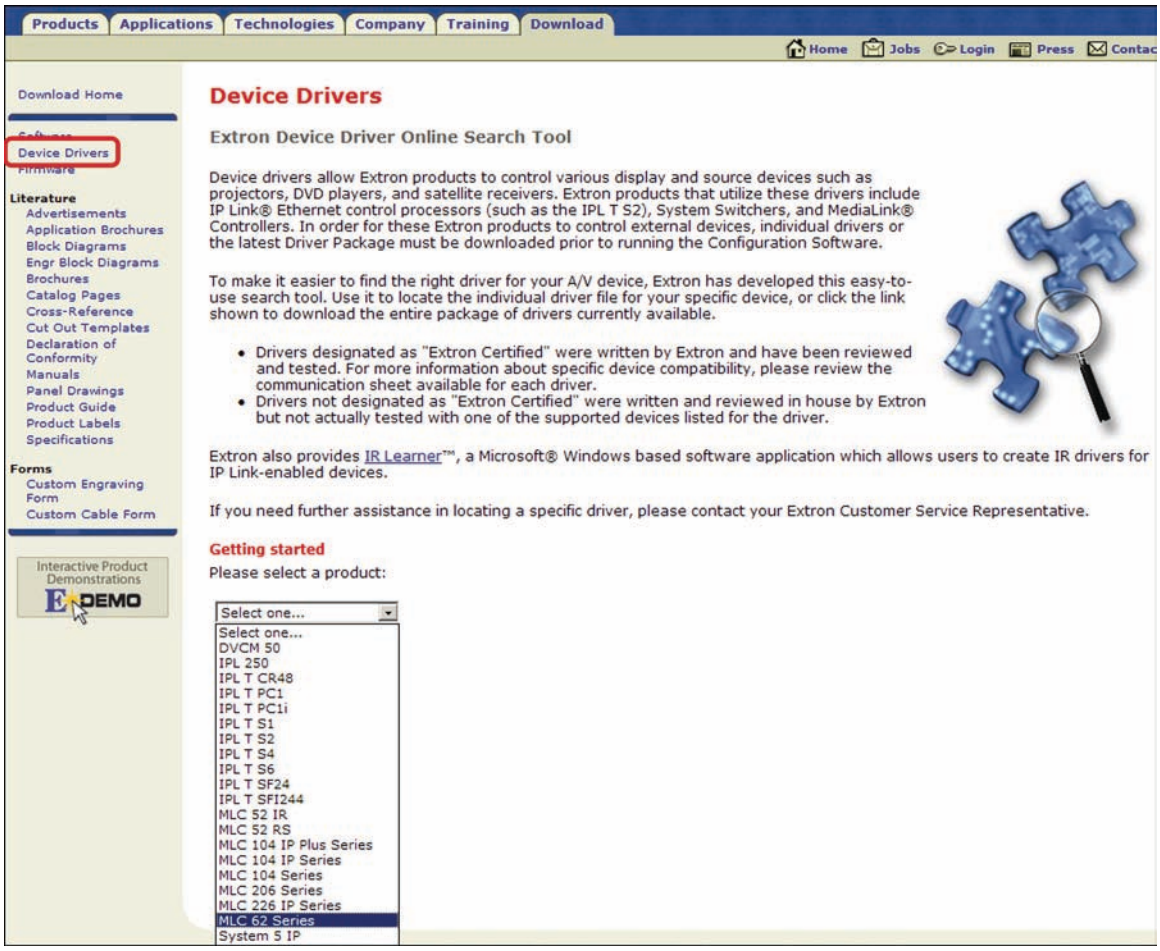
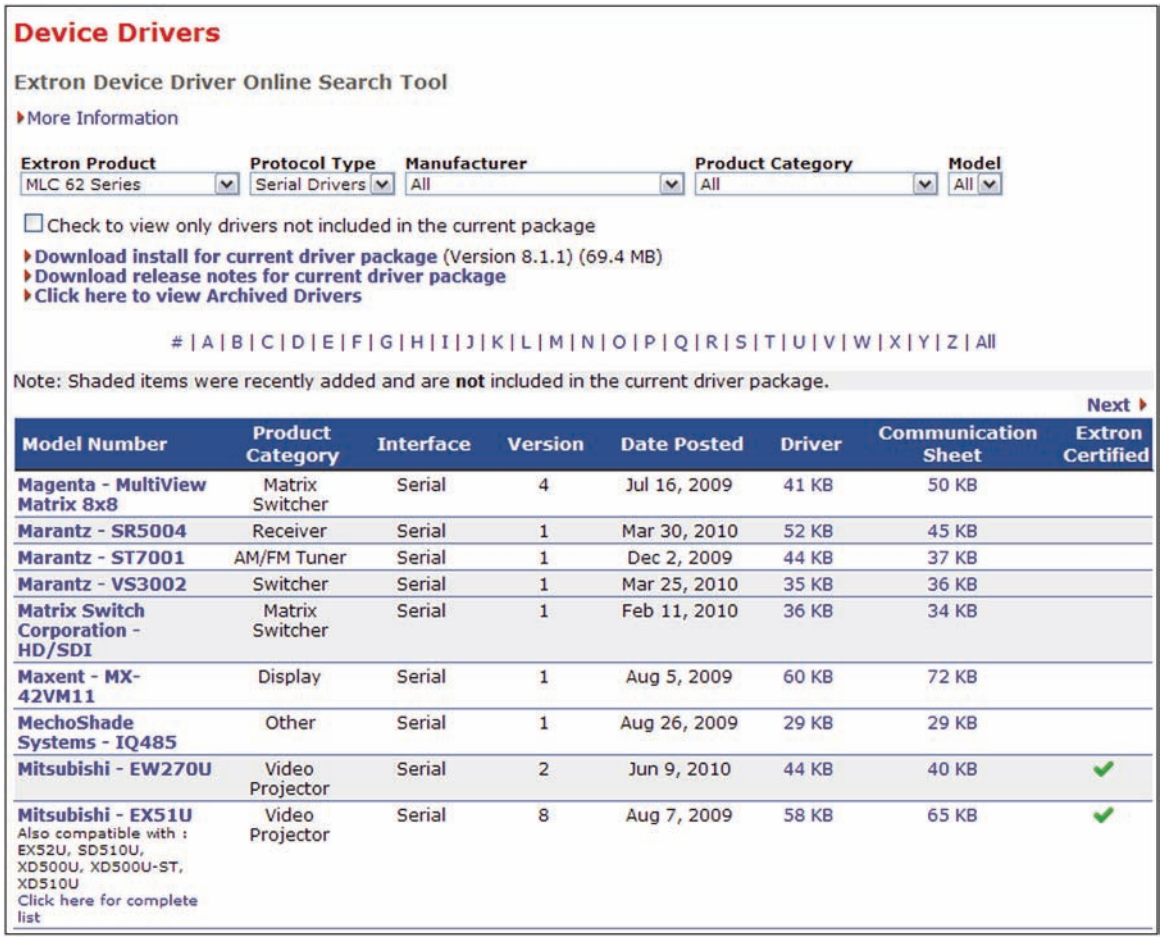

Products
Applications
Technologies
Company
Training
Download
Home
Jobs
Login
Press
Download Home
Device Drivers
Literature
Advertisements
Application Brochures
Block Diagrams
Engr Block Diagrams
Brochures
Catalog Pages
Cross-Reference
Cut Out Templates
Declaration of Conformity
Manuals
Panel Drawings
Product Guide
Product Labels
Specifications
Forms
Custom Engraving Form
Custom Cable Form
Interactive Product Demonstrations
DEMO
Device Drivers
Extron Device Driver Online Search Tool
Device drivers allow Extron products to control various display and source devices such as projectors, DVD players, and satellite receivers. Extron products that utilize these drivers include IP Link® Ethernet control processors (such as the IPL T S2), System Switchers, and MediaLink® Controllers. In order for these Extron products to control external devices, individual drivers or the latest Driver Package must be downloaded prior to running the Configuration Software.
To make it easier to find the right driver for your A/V device, Extron has developed this easy-to-use search tool. Use it to locate the individual driver file for your specific device, or click the link shown to download the entire package of drivers currently available.
Drivers designated as "Extron Certified" were written by Extron and have been reviewed and tested. For more information about specific device compatibility, please review the communication sheet available for each driver.
Drivers not designated as "Extron Certified" were written and reviewed in house by Extron but not actually tested with one of the supported devices listed for the driver.
Extron also provides IR Learner™, a Microsoft® Windows based software application which allows users to create IR drivers for IP Link-enabled devices.
If you need further assistance in locating a specific driver, please contact your Extron Customer Service Representative.
Getting started
Please select a product:
Select one...
Select one...
DVCM 50
IPL 250
IPL T CR48
IPL T PC1
IPL T PC1i
IPL T S1
IPL T S2
IPL T S4
IPL T S6
IPL T SF24
IPL T SFI244
MLC 52 IR
MLC 52 RS
MLC 104 IP Plus Series
MLC 104 IP Series
MLC 104 Series
MLC 206 Series
MLC 226 IP Series
MLC 62 Series
System 5 IP

Figure 47. Selecting MLC 62 Series from the Device Drivers Drop-down Menu

4. From the menus on the Extron Online Search Tool screen, select search criteria for the drivers you want to download. You can select the Extron Product on which the drivers will be used (MLC 62 Series is already selected), the Protocol Type (**IR**, **Serial**, or **All**), Manufacturer (device manufacturer name or **All**), Product Category (type of device or **All**), and Model (model name or **All**).

As you make each selection, the driver list below changes to display all available drivers meeting your selected criteria.



Device Drivers

Extron Device Driver Online Search Tool

More Information

Extron Product	Protocol Type	Manufacturer	Product Category	Model
MLC 62 Series	Serial Drivers	All	All	All

☐ Check to view only drivers not included in the current package

Download install for current driver package (Version 8.1.1) (69.4 MB)
Download release notes for current driver package
Click here to view Archived Drivers

| A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | All

Note: Shaded items were recently added and are **not** included in the current driver package.

Next

Model Number	Product Category	Interface	Version	Date Posted	Driver	Communication Sheet	Extron Certified
Magenta - MultiView Matrix 8x8	Matrix Switcher	Serial	4	Jul 16, 2009	41 KB	50 KB	
Marantz - SR5004	Receiver	Serial	1	Mar 30, 2010	52 KB	45 KB	
Marantz - ST7001	AM/FM Tuner	Serial	1	Dec 2, 2009	44 KB	37 KB	
Marantz - VS3002	Switcher	Serial	1	Mar 25, 2010	35 KB	36 KB	
Matrix Switch Corporation - HD/SDI	Matrix Switcher	Serial	1	Feb 11, 2010	36 KB	34 KB	
Maxent - MX-42VM11	Display	Serial	1	Aug 5, 2009	60 KB	72 KB	
MechoShade Systems - IQ485	Other	Serial	1	Aug 26, 2009	29 KB	29 KB	
Mitsubishi - EW270U	Video Projector	Serial	2	Jun 9, 2010	44 KB	40 KB	✔
Mitsubishi - EX51U Also compatible with : EX52U, SD510U, XD500U, XD500U-ST, XD510U Click here for complete list	Video Projector	Serial	8	Aug 7, 2009	58 KB	65 KB	✔

Figure 48. Entering MLC 62 Driver Search Criteria

5. Click on the device name whose driver you want to download.

To download all the drivers in the current package, click the **Download install for driver package (Version *n*)** link.

> **NOTES:** The Web site may contain additional drivers that became available after the current driver package was created. These new drivers may be on the Web site, but not have been incorporated into the driver package.
>
> If you want to ensure that you are getting all the drivers currently available, use the configuration program to download the drivers. (See "**Downloading the Drivers using the Configuration Program**," earlier in this section.)

6. On the Download Center screen, enter the requested information, and click the **Download drivername** button.

7. Follow the directions on the download screens that follow. Unless you specify otherwise, the driver file is placed at one of the following locations on your computer:

- **Windows XP** — c:\Documents and Settings\All Users\Shared Documents\Extron\Driver2
- **Windows 7 and Vista** — c:\Users\Public\Documents\Extron\Driver2

Creating an MLC 62 Configuration — Getting Started

To use the MLC 62 to control devices, you must create one or more configurations for it, using the MLC 62 configuration program. A configuration is a set of specifications for button command assignments and port parameters that enable the MLC 62 to control your display device or switcher.

After you have downloaded and installed the software and device drivers, perform the procedures described on the following pages to create MLC configurations.

NOTE: Configurations can be created away from the job site and without the MLC being connected to the computer.

Overview of Steps to Create a Configuration

This section lists the major steps to creating a configuration. The procedures for each step are described later in this section. For more details of each procedure, refer to the MLC 62 configuration program help file.

1. Start a new project. To get started using the MLC 62, you need to start a new project, to which you will add one or more configurations for your MLC. See "**Starting a New Project**," below.
2. Configure the IR and/or serial ports. See "**Configuring the IR and Serial Ports**."
3. Configure the front panel buttons. See "**Configuring the Front Panel Buttons**."
4. Set up relays, if desired. See "**Adding relays to buttons**."
5. Configure the Digital Input port, if desired. See "**Configuring the Digital Input Port**."
6. Save and upload the configuration to the MLC. See "**Uploading a Configuration to the MLC.**"

Starting a New Project

An MLC 62 project is a file (with a .mlp extension) that contains port and button configurations for one or more MLC 62s. A configuration must be created within a new or existing project. A project can be saved, copied, and edited (for example, by adding or changing configurations within it). You can also create a configuration and add it to an existing project.

You can start a new project either when first opening the MLC 62 software or while the software is open and another project is active.

NOTE: Only one project can be active at a time. Opening a new project closes the current one.

1. Open the MLC software by selecting the MLC icon from the Start menu your computer desktop. By default, the software is located at All Programs\Extron Electronics\MLC 62\MLC 62. The Start Options window opens in front of the MLC 62 window.
2. On the Start Options window, select the **Create a New Project radio button**.
3. Click **OK**. The Add Device dialog box opens.

4. On the Add Device window, enter a name for your MLC in the Device Name field.
5. Select the MLC 62 model from the Select Model drop-down list.

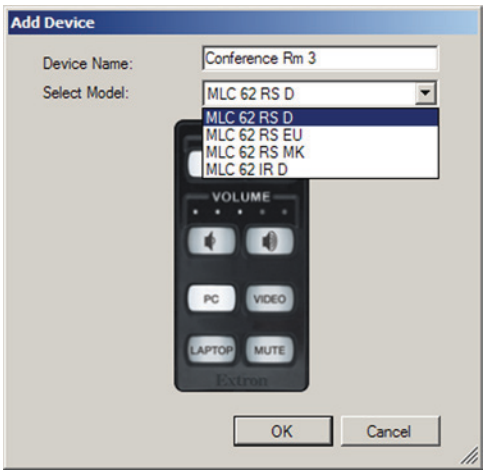


Figure 49. Add Device Window with Select Model Menu Displayed

6. Click **OK**. The MLC 62 main window opens.

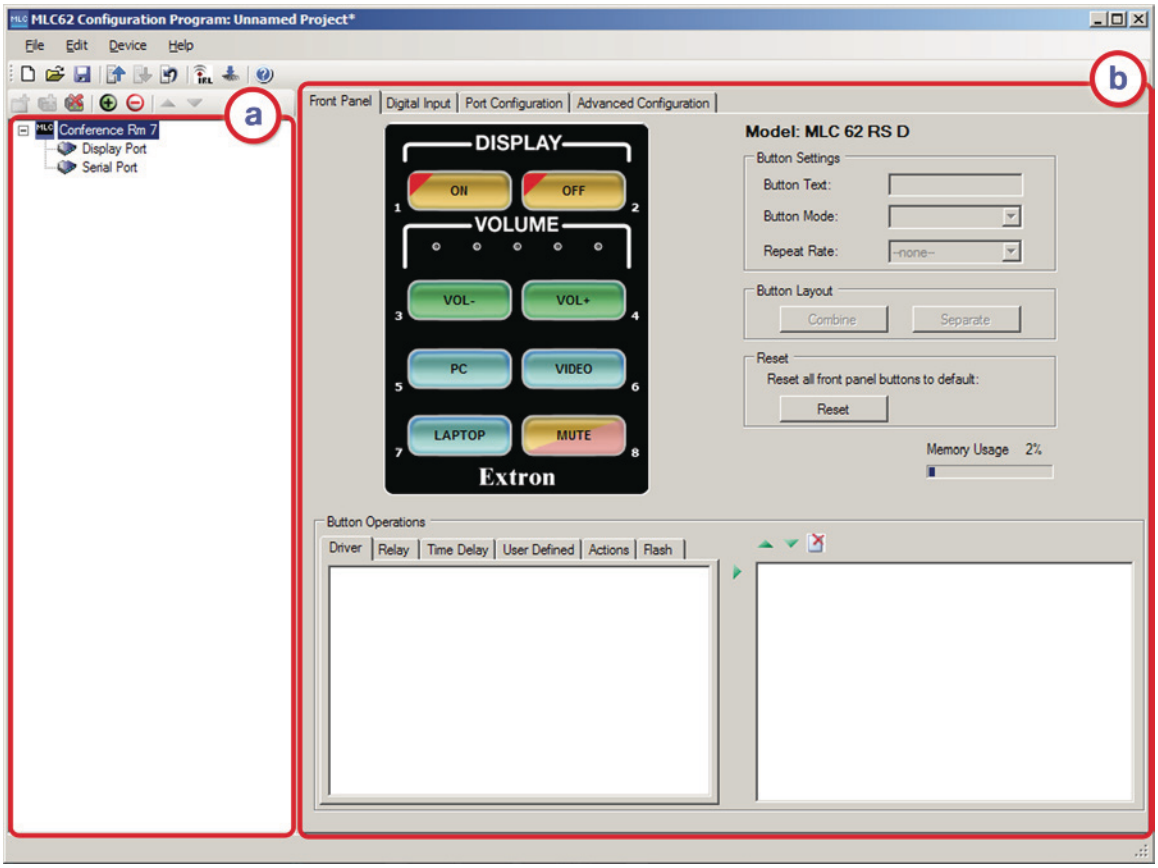


Figure 50. The MLC 62 Main Window

The MLC 62 window is divided into the following major sections (see the illustration above):

- (a) The **device configuration tree** enables you to store multiple device configurations, organize them, and save them all as a single project file.
- (b) The **Front Panel tab** enables you to configure the buttons and assign all commands to them.

The following is displayed on the MLC 62 window:

- The device configuration name appears in the configuration tree in the left pane, with the names of the two ports ("Display" and "Serial" or "IR") to which a device can be connected and controlled via IR or RS-232.
- The **Front Panel** tab is displayed in the main section of the window and contains a diagram representing the front panel of your selected MLC. (If this tab appears blank when opened, click on the name of the MLC device configuration in the left pane to display it.)

  NOTE: For identification purposes, the buttons in the diagram are numbered 1 through 8, from left to right in each row. When two buttons are combined into one, as in the six-button configuration, their identification numbers are combined as well. In this manual, a combined button is identified by both numbers; for example, when buttons 5 and 6 are merged, they become **button 5/6**.

- In the title bar, the project name is shown as "Unnamed Project*." (The asterisk following the name indicates that the project has not been saved since changes were made.)

7. Save and name your project as follows:
   a. From the File menu, select **Save As...** .
   b. On the Save As window, give your project file a name and save it to the desired location on your computer.

      NOTE: Your project is saved as a file with the extension **.mlp**.

8. Proceed to configure the MLC buttons and ports as described in the following sections.

Managing projects

You can perform the following file operations on the projects you create. For details on each procedure, refer to the MLC 62 configuration program help file.

- **Save the current project:**

  Select **Save** from the File menu or click the **Save the Current Project** button on the main toolbar.

- **Name a project or create a new project based on the current one:**

  Select **Save As...** from the File menu, and enter the project file name and location on the Save As window.

- **Open an existing project:**

  Select **Open** from the File menu, or click the **Open an Existing Project** button on the Main toolbar. Locate and double-click on the project name in the Open window.

Configuring the IR and Serial Ports

The MLC 62 can control devices or switchers via two rear panel ports (the IR/S and RS-232 ports) on the RS models or via one port (the IR port) on the MLC 62 IR D. Use the MLC 62 configuration program to add the desired drivers to each IR or serial port to which a device (for example, your display or switcher) is connected.

To configure a port, follow these steps and refer to the illustration below.

1. If you have not already done so, download the drivers for the devices you will be connecting to the MLC.
2. On the device configuration tree on the MLC 62 window, select the port to which your device will be connected (ports are listed below the names of their configurations).

   For RS models, it is recommended that you start with the Display port (labeled "RS-232" on the rear panel).

   When you click on a port name, the Port Configuration screen is displayed in the right section of the MLC 62 window. You can also click the **Port Configuration** tab to display it.

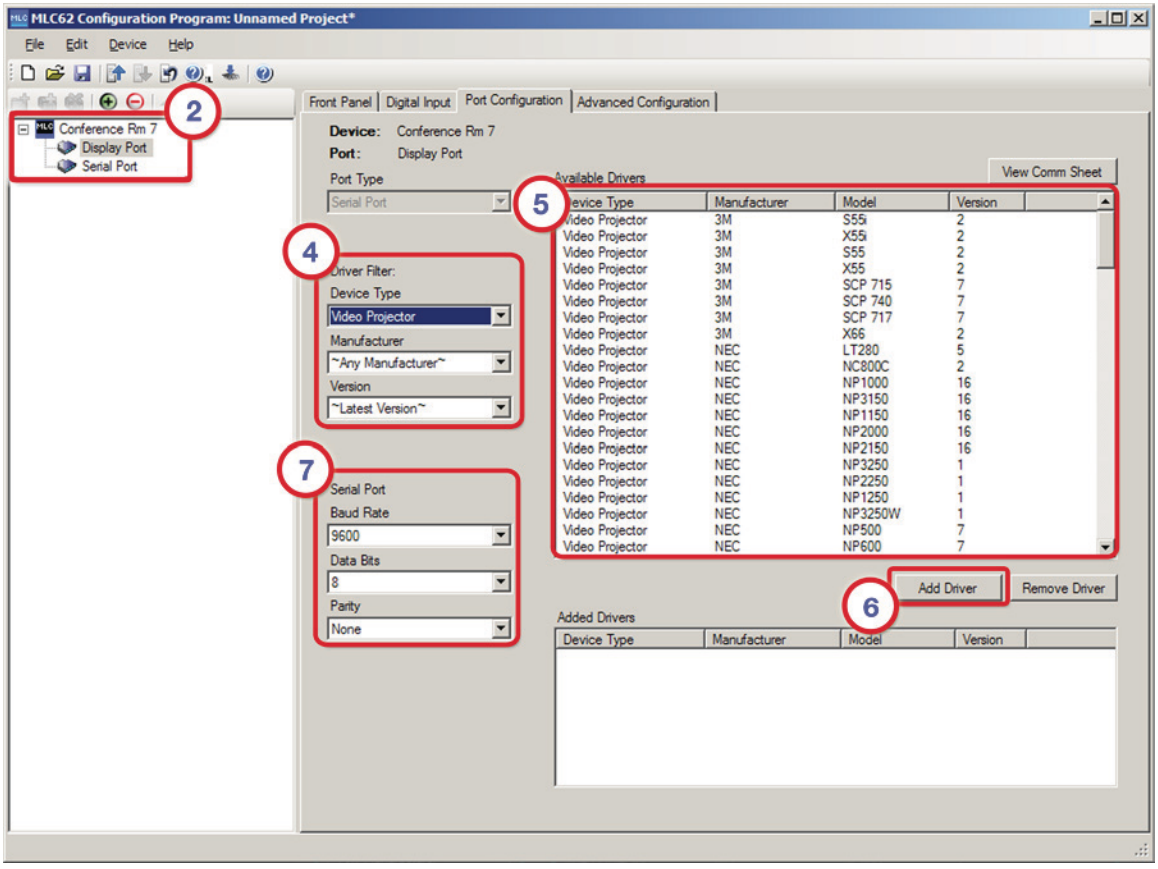


Figure 51. Port Configuration Tab

3. **RS models only:** (Optional) If you selected Serial Port (representing the IR/S port on the rear panel) in step 2 and want to configure the IR/S port for IR, select IR Port from the Port Type drop-down menu. When you select the IR Port option, Serial Port changes to IR Port on the device configuration tree.

   NOTE: If the device configuration you are creating is for IR only or if you selected Display Port (representing the RS-232 port on the rear panel) from the device configuration tree, the Port Type menu is unavailable.

   If you selected the Serial (IR/S) port in step 2, the Port Type menu has two options: **IR Port** and **Serial Port**. (**Serial Port** is the default.) If you will be using IR communication with the device connected to the IR/S port, select IR Port from this menu. When you select the IR Port option, **Serial Port** changes to **IR Port** on the configuration tree.

4. (Optional) Set the driver display filters. If you want to display only a selected portion of the available drivers, set filters for this field by making selections from the drop-down menus in the Driver Filters section:

   - **Device Type** — Select the type of device the MLC will control from the port being configured (for example, **DVD**, **switcher**, or **Video Projector**). Only drivers of the selected type are displayed in the Available Drivers field. Select **Any Device Type** to display all device types for which you have drivers.
   - **Manufacturer** — Select the manufacturer of the device that will be connected to the port (for example, **3M**, **Sony**, or **Leica**). Only drivers made by the selected manufacturer are displayed in the Available Drivers field. Select **Any Manufacturer** to display drivers from all manufacturers.
   - **Version** — Select **Latest Version** to display only the latest version of device drivers, or Any Version to display all versions of drivers.

     After you make each menu selection, all drivers downloaded in step **1** that meet your selected criteria are displayed in the Available Drivers field to the right.

5. In the Available Drivers window, select the driver for the device that will be connected to the port.
6. Click **Add Driver**. The name of the selected device driver is displayed in the Added Drivers field.

   To delete a driver from the Added Drivers field, select it in the field, then click the **Remove Driver** button.

   NOTE: Only one driver can be added to a serial port. An IR-configured port may have multiple drivers assigned.

7. **Serial connection only:** From the Baud Rate, Data Bits, and Parity drop-down menus in the Serial Port field, select the port parameters required by your device for connection to the MLC.

   To obtain this information, if needed, click the **View Comm Sheet** button. A PDF document opens, giving information about the selected device driver. (The port configuration information is on the last page under "Serial Communication.")

   NOTE: If **Display Port** was selected from the configuration tree in step **2**, these parameters are automatically set.

8. If you have configured the port for IR, repeat steps **5** and **6** to add more IR drivers if desired.

Configuring the Front Panel Buttons

The Front Panel tab on the MLC 62 window enables you to configure the buttons on the MLC 62 front panel. By clicking on a button, then making selections from the available menus, fields, and sub-tabs on the **Front Panel** tab, you can configure the corresponding button on the MLC front panel.

Default button configurations

The MLC 62 configuration software provides a default button configuration, which is displayed in the diagram on the **Front Panel** tab when you first open a new project. In this basic configuration, the buttons in the diagram are labeled to match the physical buttons installed in the MLC at the factory. The screen buttons are also colored to indicate the grouping modes in which the front panel buttons are preset. Depending on the model you selected, the default configuration contains some commands assigned to certain buttons.

Button modes, commands, and labels can be changed as desired to create new MLC 62 configurations. When you upload a configuration to the MLC, the front panel buttons are grouped as specified and perform the commands assigned in the new configuration.

Command types for the buttons

The following types of commands and functions can be added to the buttons via the sub-tabs on the Front Panel screen. Refer to the MLC 62 configuration software help file for details on each type of command and the procedure for assigning it.

- **Driver commands** — The **Driver** sub-tab lets you specify the commands that will be issued from the selected port (IR, IR/S, or RS-232) to the connected display device or switcher when the button is pressed on the front panel. (See "**Assigning driver commands to buttons**" on the next page.)
- **Relays** — The **Relay** sub-tab lets you specify the relay commands that will be issued from the Relay port(s) when the button is pressed. Devices connected to the Relay port could include a projector screen that is to be raised and lowered, room lights that are turned on and off, or a low-voltage controller (LVC) to which a device is connected. (See "**Adding relays to buttons**," later in this section.)
- **Time delays** — The **Time Delay** sub-tab lets you insert a delay of a specified number of seconds between functions when multiple commands have been assigned to the button. You can set the amount of seconds that the MLC waits after issuing a command before it issues the next one. The delay period can be from 0.5 to 90 seconds in 0.5 second increments.
- **User Defined commands** — The **User Defined** sub-tab lets you enter commands in ASCII or hexadecimal, including SIS commands, to assign display functions that are not pre-defined in your device driver. (Refer to the user manual for the display device or switcher to find out what commands are supported.)
- **Actions** — A Button Selection action emulates a button press on the MLC 62 front panel, causing all functions programmed to the button to be performed. The **Actions** sub-tab lets you add all the commands assigned to another front panel button to the button you are configuring, emulating a press of the other button. Actions are available for each of the MLC buttons. When you add an action to a button and press it, all the functions programmed to that button are performed, followed by all the functions on the button whose action you added.

- **Button flashing** — The **Flash** sub-tab lets you add a flash period with a duration of 1 to 120 seconds to the button. You can also specify whether the button flashes rapidly or slowly during this delay period. During the flashing period, all front panel buttons are disabled and do not respond to pressing.

> **NOTE:** You cannot add flash commands to a power button on this tab. To adjust the length of time the power buttons flash during power-up and power-down, see "**Selecting display power settings**," later in this section.

Assigning driver commands to buttons

After you have selected a driver for your display device or switcher that will be controlled by the MLC 62, you are ready to assign the commands that are available with that driver to the buttons on the MLC 62 front panel. The **Driver** sub-tab on the **Front Panel** tab contains a list of the commands available with the driver. From this field, you select commands to assign to the buttons.

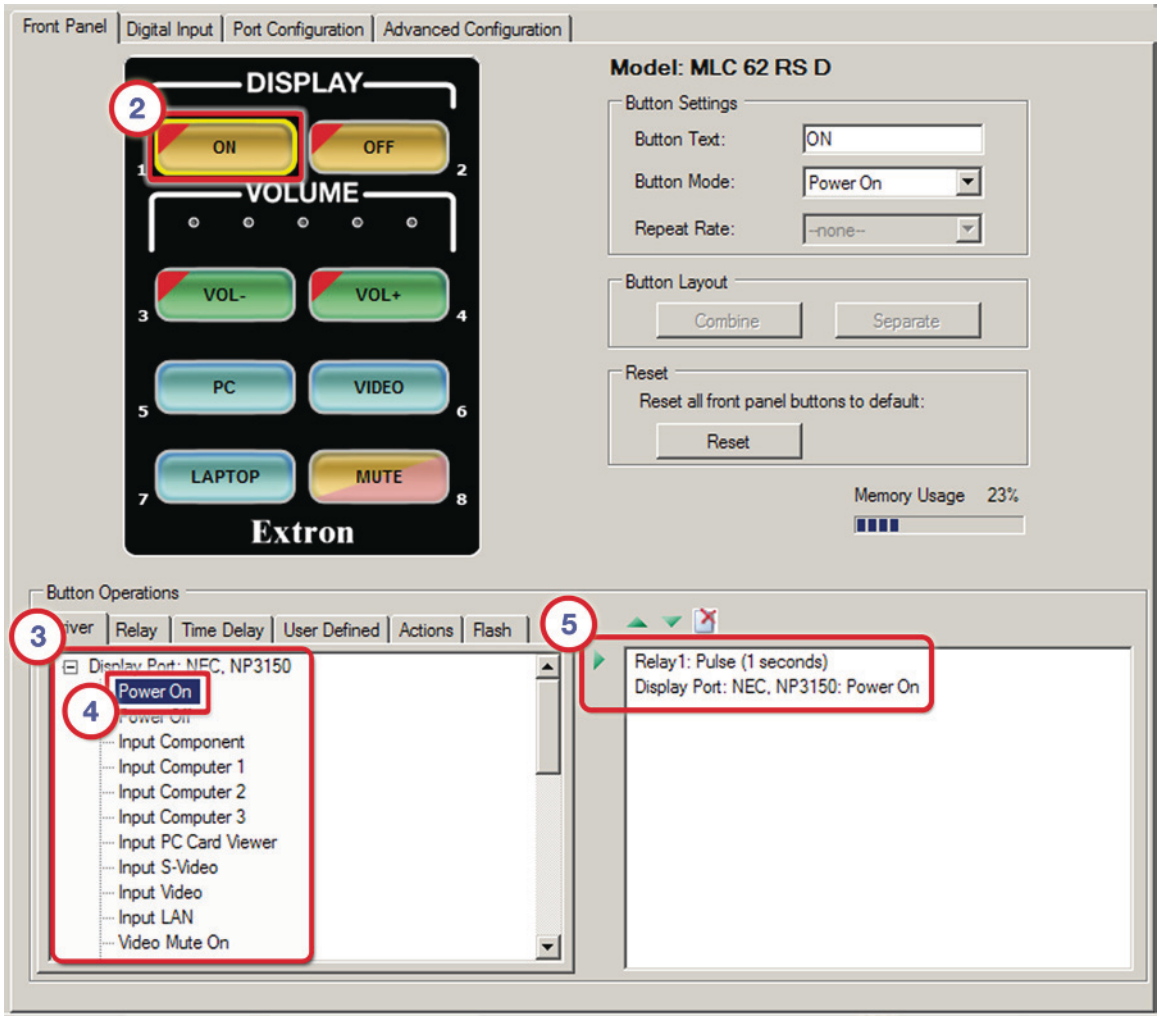


Figure 52. Adding Commands to a Button

If you selected the Display (RS-232) port and want to keep the auto-filled commands, you need to add commands only to the last four buttons (by default configured as input selection buttons and labeled **PC**, **Video**, **Laptop**, and **Mute**). If you have selected the IR or Serial port, or if no power or volume commands are available with your driver, you need to configure all of the buttons.

NOTE: **Relay 1 Pulse (1 second)** and **Relay 2 Pulse (1 second)** commands are automatically added to the power On and Off buttons, respectively, on the RS models. This is a common configuration that can be used to raise and lower a motorized screen that is connected to the Relay port.

To add driver commands to each button, follow these steps and refer to the illustration on the previous page:

1. Click the **Front Panel** tab to display the diagram of the front panel buttons.
2. Click on the button to be configured. The following occurs on the screen:
   - A yellow box surrounds the selected button. (In the example on the previous page, the display power **On** button was selected.)
   - The fields in the Button Settings section change to reflect the current settings for the selected button.
3. On the **Driver** tab in the Button Operations section, click the **+** sign in front of the driver name to expand the menu and view the commands available with that driver.
4. On the **Driver** sub-tab, click on the name of the command to be programmed onto the selected button. In the example above, the Power On command was selected for the **On** button.
5. Click the green right arrow between the two Button Operations fields. The selected driver command is displayed in the current commands field, to the right of the **Driver** sub-tab.

   When a command is added to a button, a red triangle covers the upper-left corner of the button on the screen.

   In the example on the previous page, the **Mute** button is set up as a toggle (indicated by its division into two different colored sections). When you click on it, two fields, labeled Toggle On and Toggle Off, appear in the current commands field.

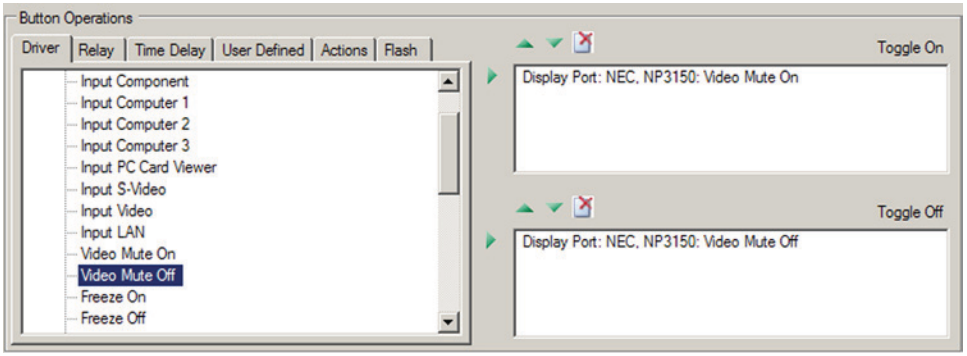


Figure 53. Driver Sub-tab and Current Commands Fields for a Toggle Button

   To add commands to a toggle button, repeat steps **3** and **4** for each of these fields to add different commands to them. (See "**Setting the button modes**," later in this section, for instructions on creating a toggle button.)

6. If desired, repeat steps **3** through **5** to assign more commands to the button. You can add multiple commands to any button, including each portion of a toggle button. After the configuration has been uploaded to the MLC, when you press the button the commands are performed in the order they appear in the Button Operations field.

Removing Commands

To remove a command from a button:

1. In the current command display field, click to highlight the command that you want to remove.
2. Click the **Remove** button above the current command field.

Reordering Commands

When a button has multiple commands assigned to it, you can specify the order in which the commands are performed, as follows:

1. In the current command display field, select the command that you want to move.
2. Click the green **Move Up** or **Move Down** arrow button above the current command field to move the selected command higher or lower on the list. The commands are performed in the order they are listed in this field.

Automatic button settings for the Display port (RS models only)

If you select the Display port to configure, the software automatically adds the following commands (if available with the selected driver) to the power On, power Off, and Volume buttons.

- Power and volume commands are added to the MLC front panel Power and Volume buttons. The diagram on the **Front Panel** tab reflects these changes.
- Warm-up and cool-down periods are specified for projectors and displays. (See "**Selecting display power settings**," later in this section.)
- The Serial Port settings are selected from the Baud Rate, Data Bits, and Parity menus (serial configurations only).

This sets up a commonly-used configuration. If desired, however, you can remove any of these commands and replace them with others, as described below.

Setting the button modes

Button modes determine how the buttons respond when pressed or how they are grouped to function together. The button color on the **Front Panel** tab indicates the current mode of the button. The following button modes are available:

- **Power On and Power Off** — Gold

  Groups two buttons to be mutually exclusive. If you press a button in Power On or Power Off mode on the physical front panel, it lights brightly while the other button dims and becomes inactive.

- **Volume** — Green

  Repeatedly pressing or pressing and holding a physical button in Volume mode increases or decreases the audio volume on the display device in increments specified in the device driver. Only the Volume buttons can be in Volume mode, and they cannot be changed from this mode.

- **Input** — Cyan

  All buttons in this mode form a mutually exclusive group. When you press a button in Input mode, it activates and lights brightly while all other buttons in input mode become inactive and dim.

- **Toggle** — Gold and pink

  In this mode, two commands (or command sets) are programmed to the button. Repeated presses of the button on the front panel switch back and forth between the two commands.

- **Single switch** — Silver

  The button functions independently of all other buttons. A single press issues a single command.

- **Single power** — Gold and orange

  In Single Power mode, the button toggles between issuing a power on and a power off command. This mode is similar to Toggle mode, except for warm-up and cool-down periods, during which the button blinks. Only one button at a time can be set to Single Power mode, and only if no other power buttons have been defined.

- **Group1** — Blue; **Group2** — Pink

  Buttons in either of these modes function the same as in Input mode. Use these modes if you want to form groups of buttons in addition to your Input mode group.

For more detailed information on button modes and their uses, refer to the MLC 62 configuration software help file.

Default button mode settings

For the default configuration, the button modes are set as described below. To save time when getting started, it is recommended that you assign commands that are appropriate for the current mode of each button. For example, if you assign an Input Video command to the blue **Video** button (which is in input mode), you ensure that only the video input is selected when you press that button, and you do not have to change the button mode or label.

- **On and Off buttons (buttons 1 and 2):** Set to **Power On** and **Power Off** modes (gold).
- **Vol- and Vol+ buttons (buttons 3 and 4):** Set to **Volume** mode (green).
- **PC, Video, and Laptop buttons (buttons 5, 6, and 7):** Set to **Input** mode (cyan).
- **Mute button (button 8):** Set to **Toggle Switch** mode (gold and pink)

Selecting the button mode

If you want to change the mode of a button in order to assign the desired commands to it, follow these steps:

1. Select the **Front Panel** tab.
2. On the front panel diagram, click on the desired button.
3. From the Button Mode drop-down menu in the Button Settings field, choose the mode for the selected button. The button changes to the color of the mode you selected. (See the **illustration on the next page**.)

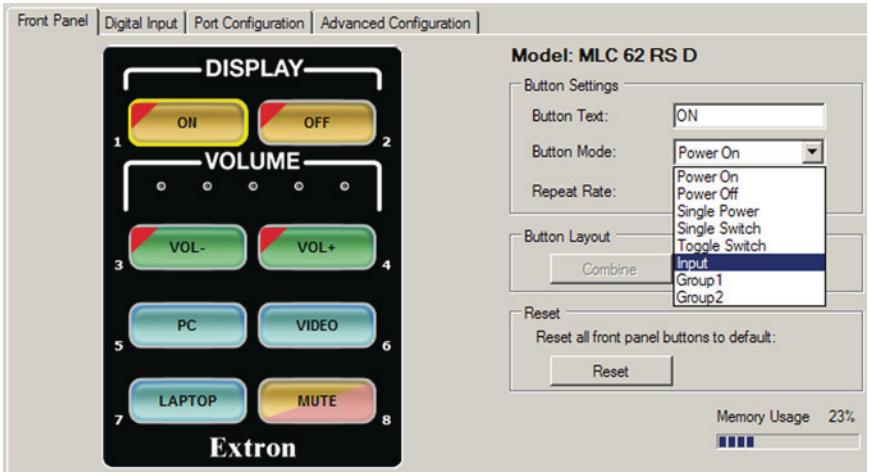


Figure 54. Button Mode Menu on the Front Panel Tab

Other button settings

The **Front Panel** tab also provides the following settings for the buttons. Refer to the MLC 62 configuration software help file for detailed procedures for changing these settings.

- **Button Text** — Enter a label name for the selected button.
- **Repeat Rate menu** — If you press a button and hold it, the MLC continually repeats the command(s) programmed to that button in sequence, for as long as you hold the button. From this menu you can select the number of seconds that the MLC waits before repeating the command(s).
- **Button Layout** — Click **Combine** to create a single long button from the selected button and the one next to it. Click **Separate** to create two buttons from a combined one. (Only buttons 5 through 8 can be combined.)
- **Reset** — Click **Reset** to return all settings you have entered on the Front Panel tab to the default configuration.

Adding relays to buttons

In addition to driver commands, you can add relay commands to the front panel buttons to control devices (such as room lights or a motorized screen) that are connected to one or both of the MLC relay ports. When a button containing relay commands is pressed, the relay state is changed, causing the device connected to the relay port to perform its function (turning on or off, raising or lowering, and so on). (If a button containing relay commands also contains driver commands, those commands are performed as well when the button is pressed.)

The following modes are available for the relay ports:

- **On** — Acts as normally closed.
- **Off** — Acts as normally open (default).
- **Toggle** — Changes the relay back and forth between closed and open states with each button press.
- **Pulse** — Closes the relay for a specified number of seconds with each button press.

For convenience, the default button configuration includes relay commands added to the display power On and Off buttons (a common motorized screen relay setup). These relays could be used, for example, to lower or raise a motorized screen whenever the projector power is turned on or off.

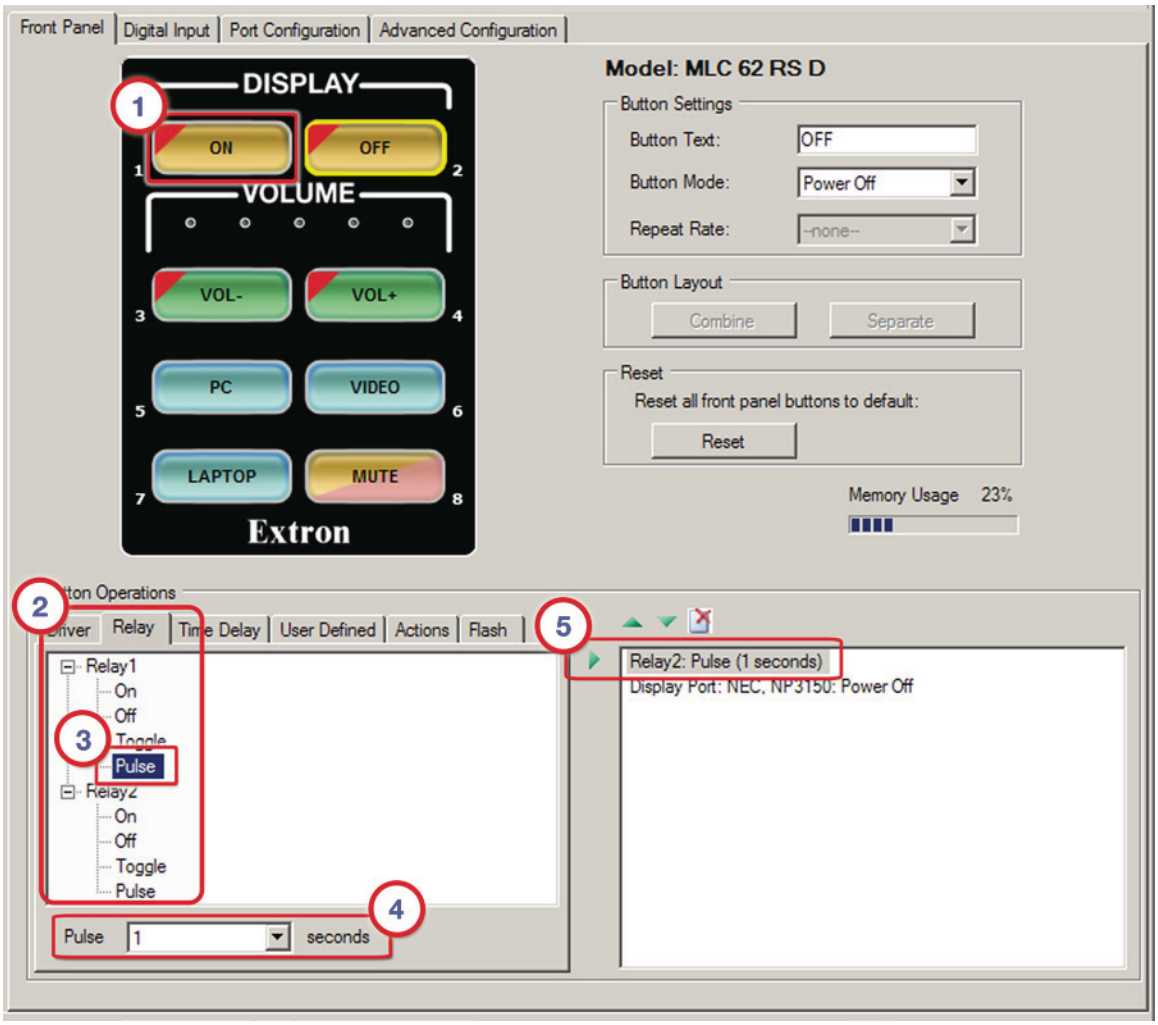


Figure 55. Assigning a Relay to a Button

To assign a relay to a button:

1. On the front panel diagram, click the button to which the relay will be added.
2. Click the **Relay** sub-tab.
3. Select the relay mode (**On**, **Off**, **Toggle**, or **Pulse**) under the name of the relay port to which the device is connected (Relay1 or Relay2).
4. If you selected **Pulse**, select the duration of the pulse from the Pulse drop-down menu at the bottom of the **Relay** sub-tab. Otherwise, skip to step ***5***.
5. Click the green command arrow button . The selected relay port name and mode are displayed in the current commands field.

Configuring the Digital Input Port

The Digital Input port on the MLC 62 rear panel lets you connect a switch or sensor to control other devices that are connected to the MLC serial, IR, and relay ports. On the **Digital Input** tab, you can assign commands to the high and low states of the Digital Input port. When the switch or sensor connected to the port is activated (for example, motion or temperature change is detected, a switch button is pressed, or a key is turned), the port crosses the threshold into its other state. This triggers the MLC Relay, Display, or Serial port to issue specified commands to the devices connected to them. The connected devices then perform actions in response to these commands. (Configuring the Digital Input port is optional.)

Example: You could configure the Digital Input port so that when a button is pressed or a key is turned on a connected switch, the projector (connected to the Display or Serial port) powers on, the room lights (connected to one of the Relay ports) turn off, and the motorized projector screen (connected to the other Relay port) lowers.

Switches and Sensors

Most types of switches and sensors can be connected to the Digital Input port. Switches can be any type; for example, a key that turns, one or two buttons, or a rocker. Switch operation can be momentary (the action is performed only while the switch is held) or latching (the switch remains in the position to which it was set and the action continues until the switch is put in its other position). Sensors can include motion sensors, temperature sensors, current sensors, and so forth.

Port states

The Digital Input port has two pins, between which a circuit is either formed (closed) or broken when the switch or sensor connected to the port is activated. When a circuit is formed between the two pins of the Digital Input, the port is in a low state. The changing of the port from a high state to a low state triggers the MLC to issue all commands that have been specified for the Digital Input port low state to the devices connected to those ports.

- **In Input with Pullup mode:** When you press, turn, or flip the switch again so that the circuit between the two pins of the Digital Input port is broken (becomes open), the port changes to its high state. The change from the low state to the high state triggers the other MLC commands specified for the port high state on connected devices.
- **In Input mode:** To change back from a low to a high port state, a voltage of 1.5 V to 24 V must be applied to the two pins.

Command types for the Digital Input port

The following types of commands can be added to the Digital Input port via the sub-tabs on the Digital Input screen. Refer to the MLC 62 configuration software help file for details on each type of command.

- **Driver commands** — The **Driver** sub-tab lets you specify commands that will be issued from the IR, IR/S, or RS-232 ports to the connected display device or switcher when the Digital Input port detects a change in its state. (The MLC issues commands in response to the change of port state in the same way it does when a front panel button is pressed.)
- **Relays** — The **Relay** sub-tab lets you specify relay commands that will be issued from the Relay ports when a change in state is detected. Devices connected to the Relay port could include a projector screen that is to be raised and lowered, room lights that are turned on and off, or a low-voltage controller (LVC) to which a device is connected.

- **Time delays** — The **Time Delay** sub-tab lets you insert a delay of a specified number of seconds between functions when multiple commands have been assigned to the port. You can set the amount of seconds that the MLC waits after issuing a command before it issues the next one. The delay period can be from 0.5 to 90 seconds in 0.5 second increments.
- **User Defined commands** — The **User Defined** sub-tab lets you enter commands in ASCII or hexadecimal, including SIS commands, to assign display functions that are not pre-defined in your device driver. These commands can be entered in either or both Trigger fields to apply them to the high or low state of the Digital Input port. (Refer to the user manual for the display device or switcher to find out what commands are supported.)
- **Actions** — The **Actions** sub-tab lets you add all the commands assigned to a front panel button to either of the Trigger states of the Digital Input port, emulating the press of another button. When the Digital Input port detects a change to its high or low state, all functions programmed to the specified button are performed the same as they would be if the actual button on the front panel were pressed.

> **NOTE:** Placing the MLC in executive mode (front panel lockout) is an action available via this sub-tab. See "**Locking the front panel from the Digital Input port**," later in this section, or refer to the MLC 62 configuration software help file for procedures.

Assigning commands to the Digital Input port

On the **Digital Input** tab, you can select commands or actions that will be triggered when the port detects a change from the high to low state, and other commands that will be triggered when a change from the low to high state is detected.

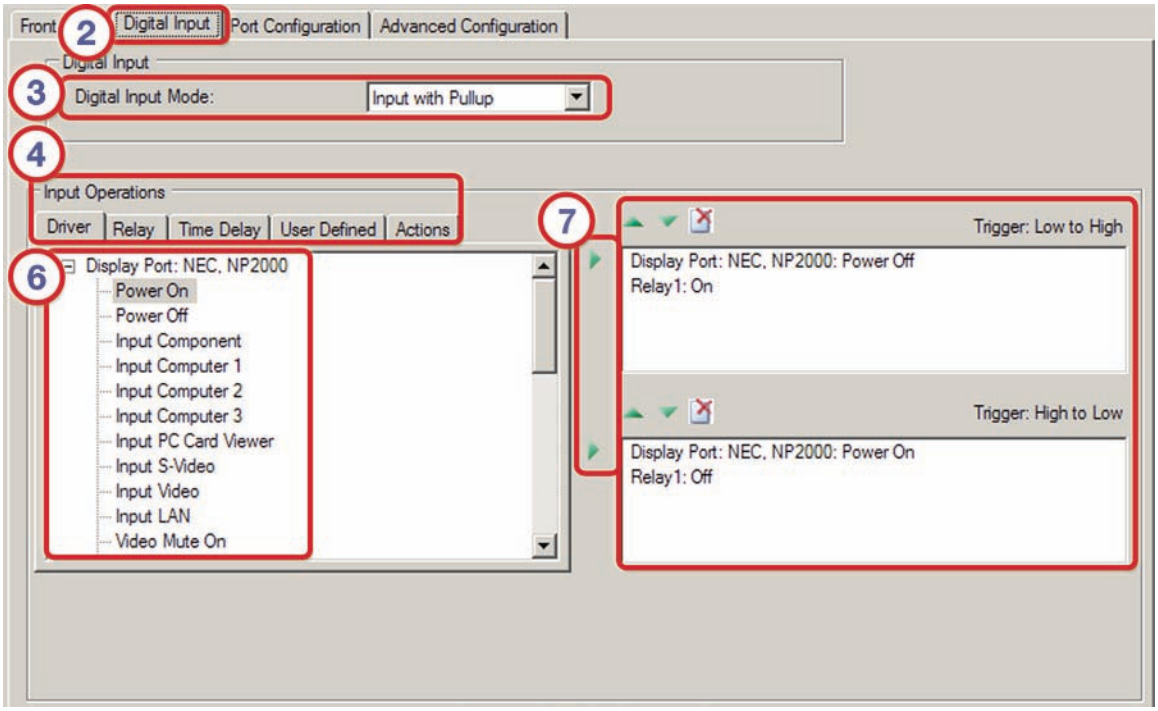


Figure 56. Adding Commands to the Digital Input Port

To add commands to the Digital Input port:

1. Connect a switch or sensor to the Digital Input port. See "**Wiring the Digital Input Port**" in the "Features, Installation, and Operation" section for more information about connecting to this port.
2. On the MLC 62 window, select the **Digital Input** tab.
3. Select the digital input mode from the drop-down menu at the top of the **Digital Input** tab. Options include:
   - **Input with Pullup** — If the switch, sensor, or other device connected to the Digital Input port does not provide its own power or is a completely mechanical device, placing the port in Input with Pullup mode enables the MLC Digital Input port to pull up to TTL (approximately 5 V) when the contacts are open. The MLC provides approximately 4.5 V of power.
   - **Input** — If the connected device provides power in the range of 0 V to 24 V, the port can be placed in input mode.
4. In the Input Operations field, select the sub-tab (**Driver**, **Relay**, **Time Delay**, **User Defined**, or **Actions**) containing the commands that you want to assign to the two states of the Digital Input port, to be initiated by the connected switch or sensor.
5. If the display device is connected to the IR/S port and the port is configured for IR, it can have multiple drivers. All added drivers are listed on the **Driver** sub-tab. Select the driver for your connected device, then either click the **+** sign in front of its name to view its commands or proceed to step **6**.
6. On the selected sub-tab, click on a command or action that you want to assign to one of the port states.
7. Click one of the green right arrow buttons located to the right of the sub-tab to place the command in one of the Trigger fields:
   - Click the arrow button beside the Trigger: High to Low field (bottom) if you want the selected command to be issued when the port state changes from high to low.
   - Click the arrow button beside the Trigger: Low to High field (top) if you want the selected command to be issued when the port state changes from low to high.

   The command appears in the Trigger field for which the arrow button was clicked.
8. Repeat steps **4** through **7** as desired to add more commands to the Trigger fields.

   NOTE: The Trigger fields list all commands that have been assigned to the high and low states of the port. When the switch or sensor triggers a change to the state of the Digital Input port, the functions assigned to one of the states are performed in the order that the commands are listed in the Trigger field.

   Example: If the room lights are currently on and you want them to be off when the projector is being used, you could assign the following commands to the Trigger: High to Low field (shown in the **illustration on the previous page**):
   - A Power On driver command to turn on the projector, and
   - A Relay 1 Off command to turn off the room lights (which are connected to the Relay 1 port via a low-voltage controller).

When the switch or sensor is triggered to change the Digital Input port state to low, this state change causes the switch to turn the lights off and the projector on.

Locking the front panel from the Digital Input port

To lock and unlock the MLC front panel using the MLC 62 configuration software, modify the current configuration by adding Enable Front Panel and Disable Front Panel actions to the Digital Input port. For this method, a switch or sensor must be connected to the Digital Input port. When the switch is activated or the sensor detects the condition that causes it to trigger a front panel lockout, the MLC goes into executive mode. When the triggering condition changes or the switch is activated again, the front panel is unlocked.

To configure the Digital Input port to lock and unlock the front panel when triggered:

1. Connect a switch or sensor to the Digital Input port. See "**Wiring the Digital Input Port (RS Models Only)**" in the "Features, Installation, and Operation" section, for information about connecting to this port.
2. Open the MLC 62 configuration program and select either the current configuration or one that you plan to upload to the MLC.
3. On the MLC 62 window, select the **Digital Input** tab.

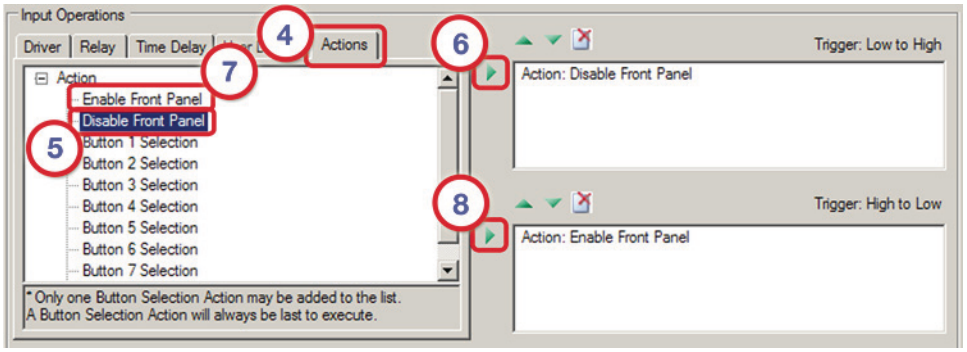
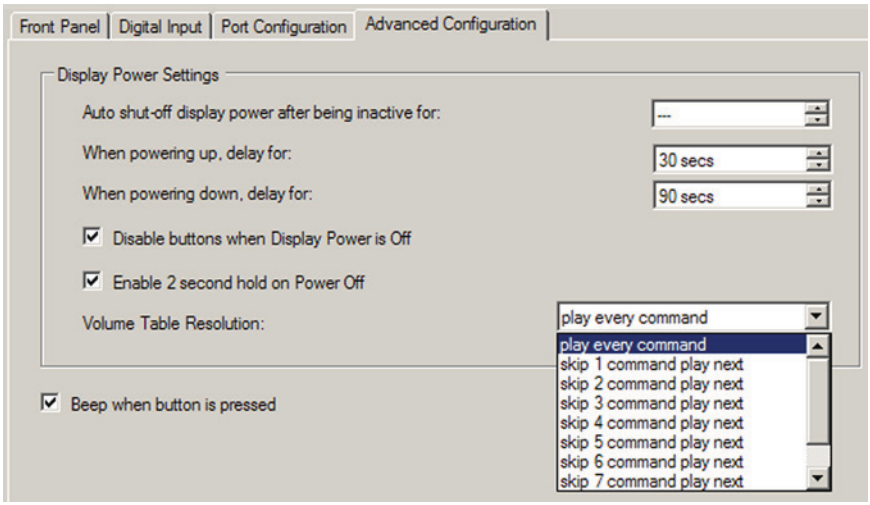


Figure 57. Adding Executive Mode Actions to the Digital Input Port

4. In the Input Operations field, select the **Actions** sub-tab.
5. On the list of actions on the Actions sub-tab, click **Disable Front Panel**.
6. Click the green right arrow button between the Input Operations field and the Trigger Low to High field. "Disable Front Panel" is displayed in the top Trigger field, preceded by "Action:". (Alternatively, you can drag the **Disable Front Panel** action from the **Actions** sub-tab to the Trigger: Low to High field.
7. Select **Enable Front Panel** from the **Actions** sub-tab.
8. Click the green right arrow button beside the Trigger: High to Low field (bottom), or drag the **Enable Front Panel** action to the Trigger: High to Low field.
9. Save the configuration and upload it to the MLC. (See "**Configuration File Management Procedures**" and "**Uploading a Configuration to the MLC,**" later in this section.)

Specifying Advanced Configuration Settings

The **Advanced Configuration** tab provides some additional settings for the display device and the MLC. Make changes to these settings as desired.


Front Panel
Digital Input
Port Configuration
Advanced Configuration
Display Power Settings
Auto shut-off display power after being inactive for:

When powering up, delay for:
30 secs
When powering down, delay for:
90 secs
Disable buttons when Display Power is Off
Enable 2 second hold on Power Off
Volume Table Resolution:
play every command
play every command
skip 1 command play next
skip 2 command play next
skip 3 command play next
skip 4 command play next
skip 5 command play next
skip 6 command play next
skip 7 command play next
Beep when button is pressed

Figure 58. Advanced Configuration Tab

Selecting display power settings

In the Display Power Settings section of the Advanced Configuration tab, you can specify certain parameters for powering your display device on and off. These settings are normally specified within the driver; however, you can make changes to the following settings.

- **Auto shut-off display power after being inactive for:** — From this menu, select the number of minutes the MLC will remain idle (with no front panel buttons pressed) before it sends a power off command to shut down the display. The range is none (—) to 480 minutes.
- **When powering up, delay for:** — From this menu, select the number of seconds the display device takes to warm up after the MLC Power On button is pressed. The range is none (—) to 300 seconds. The MLC Power On button blinks rapidly during this warm-up period.

  NOTE: If the display device is connected to the Display port, the warm-up and cool-down delays are automatically filled in when the device driver is added during port configuration (if these functions are available with the driver).

- **When powering down, delay for:** — From this menu, select the number of seconds the display device takes to cool down after the MLC Power Off button is pressed. The range is none (—) to 300 seconds. The MLC Power Off button blinks slowly during this cool-down period.
- **Disable buttons when Display Power is Off** — Select this check box to disable all the MLC front panel buttons except the Power buttons when the display device is powered off.
- **Enable 2 second hold on Power Off** — Select this check box to require that the MLC Power Off button be held for 2 seconds in order to power off the display device. After 2 seconds, the Power Off command is sent, the button begins to blink slowly, and the device starts to power down.

Specifying the volume table resolution

If the display device connected to your MLC 62 has a volume table in its driver, the display volume is increased or decreased by increments specified in the volume table each time a Volume button is pressed or pressed and held. You can configure the MLC to skip specified volume increments, essentially reducing the number of steps in the volume table, when the MLC buttons are pressed or held. This enables you to raise and lower the volume at a faster rate.

To select volume table increments to skip:

- From the Volume Table Resolution menu, select which volume increment commands you would like the MLC to skip when raising or lowering the volume.

  For example, if you select **skip 1 command play next**, the MLC would increase the volume by every other increment in the volume table.

Enabling and disabling the button press beep

The MLC 62 can be configured to emit an audible beep whenever a front panel button is pressed or otherwise activated. To enable the button beep:

- Select the **Beep when button is pressed** check box at the bottom of the **Advanced Configuration** tab.
- To disable the beep, deselect the check box.

Configuring Using IR Learning

If no Extron driver is available for your display device or you would like to add some functions to the device driver you have, you can use IR Learning to create a new driver or to edit an existing one, using the remote control of the device. When you create a new driver, its name is added to the Available Drivers list on the **Driver Configuration** tab.

To create a configuration for your MLC 62 via IR Learning:

1. From the Device menu, select **Learn IR Commands...** or click the **Learn IR Commands** button on the Main toolbar. The IR Learning Wizard starts.
2. On the first screen of the wizard, select the radio button for either **Create a new IR driver** or **Edit an existing driver by browsing for an IR driver**.

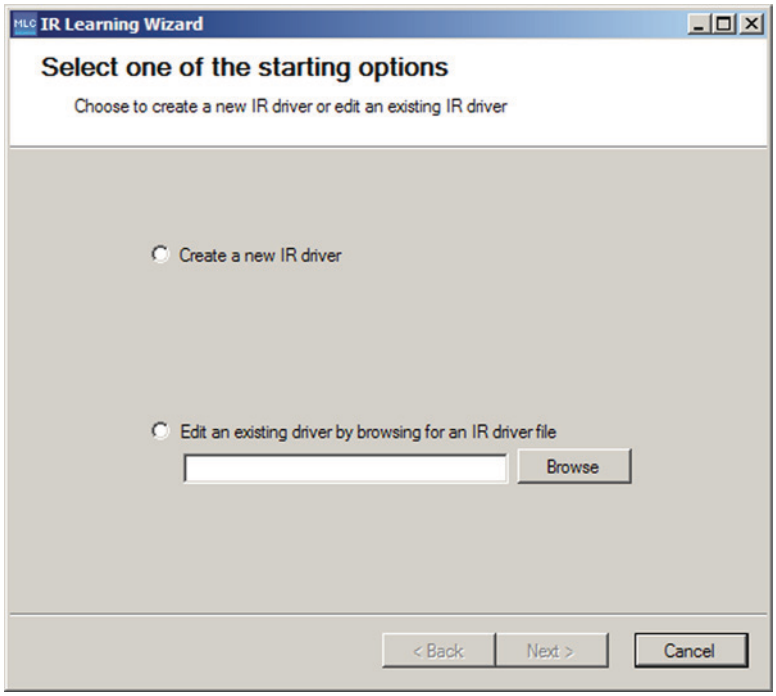

IR Learning Wizard
Select one of the starting options
Choose to create a new IR driver or edit an existing IR driver
Create a new IR driver
Edit an existing driver by browsing for an IR driver file
Browse
< Back
Next >
Cancel

Figure 59. "Select one of the starting options" Screen

3. Depending on your selection, complete either of the following procedures.

Creating a new IR driver

Follow these steps if you want to create a new driver for your display device:

1. On the "Select one of the starting options" screen, select the **Create a new IR driver** radio button, then click **Next**.
2. On the "Describe the device to be controlled by the driver" screen, select or enter your device type, manufacturer name, and model name.

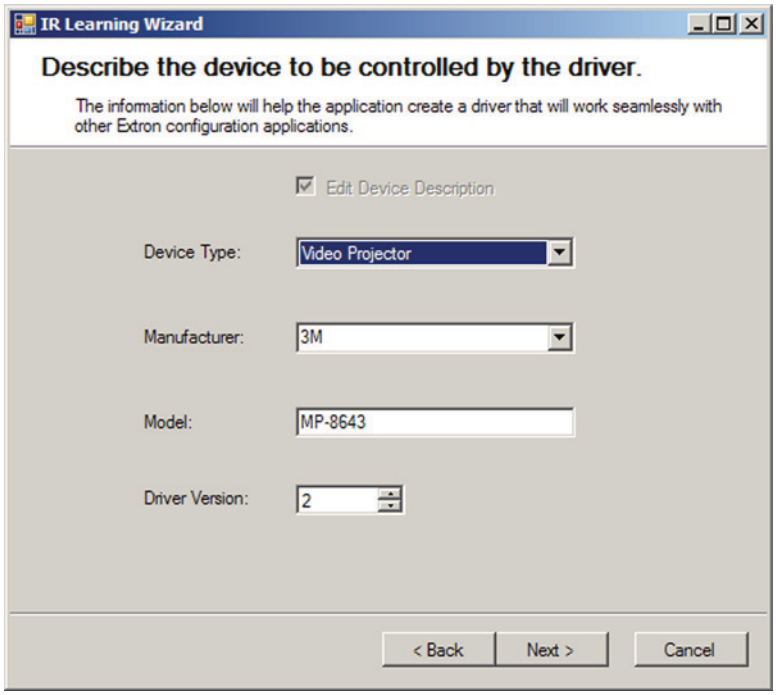


Figure 60. "Describe the device to be controlled by the driver" Screen

In the Version field, select or enter **1** if this is the first driver you have created for this device. If you are creating an additional driver for the same device but are keeping your original version as well, enter a different version number so you can differentiate between the two versions in the Available Drivers list. When finished entering the device description, click **Next**.

3. On the "Edit the driver function list" screen, the default template list of functions for your selected device is displayed. (The functions on this list vary depending on the device type that was selected.) Select the check box in front of each function that you want to include in the new driver. Only the commands checked on this screen will be learned and added to the driver.

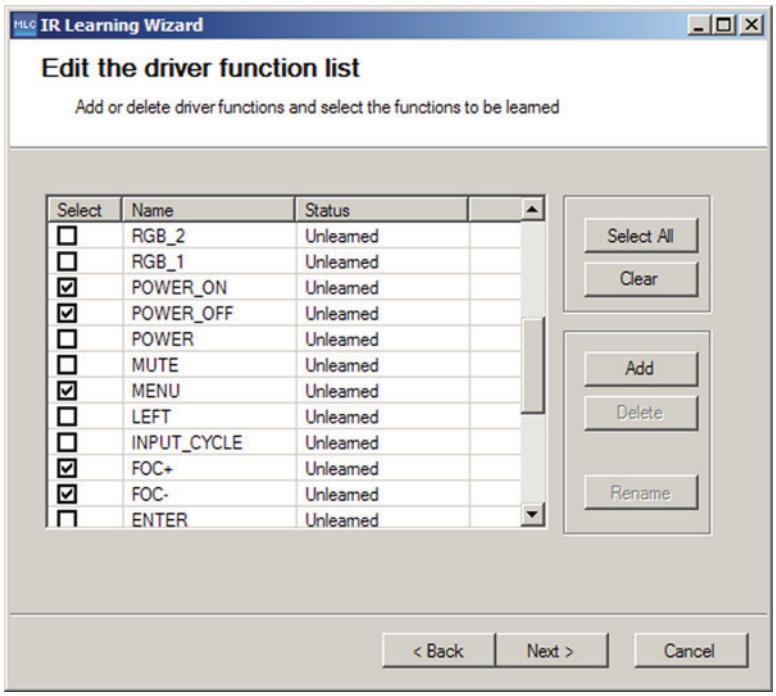
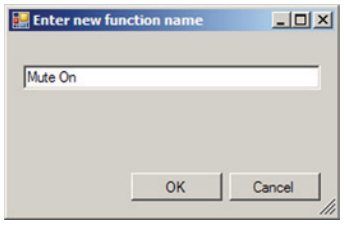


Figure 61. "Edit the driver function list" Screen

The screen also contains the following buttons:

- **Select All** — Selects the check boxes for all functions on the list.
- **Clear** — Clears all selected check boxes.
- **Add** — Click this button to add a function that is not currently on the command list. On the "Enter new function name" prompt, enter a name for the function you want to add, then click **OK**.

  The new function is added to the list on the "Edit the driver function list" screen, and its check box is automatically selected. (If you do not want to learn any of the new commands at this time, you can deselect their check boxes.)



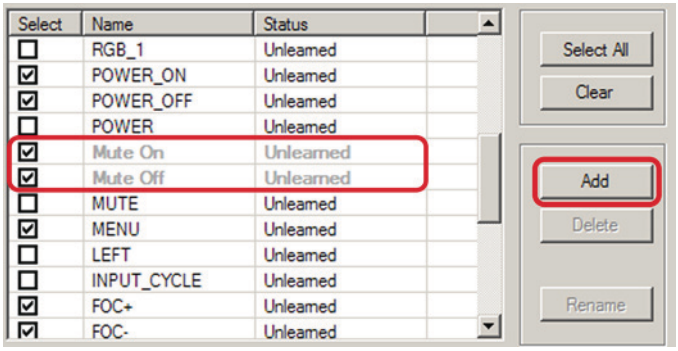


Figure 62. Adding New Driver Functions to the "Edit the driver function list" Screen

NOTES: Functions that you add are shown in **gray**, because they are not part of the default list.

Functions whose names are shown in BLACK TEXT on this screen are part of the default template of functions for the driver. These functions cannot be removed from the list; however, they can be left unchecked if you do not want to include them in the driver. Functions that are not part of the default template or have been added to the driver (shown in **grayed text**) can be deleted or renamed.

The default functions enable commands, such as those for volume and power, to be automatically added to the front panel buttons when you are using the Display port. For more information on auto-filling commands, see "**Assigning driver commands to buttons**," earlier in this section.

- **Delete** — To remove a function from the list, click on its name to highlight it, then click the **Delete** button.

  (If a function is checked when you attempt to remove it, you may need to click **Delete** twice: once to deselect its check box and a second time to remove it from the list.)

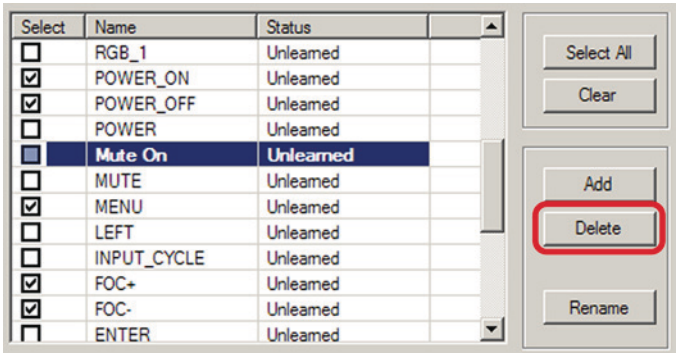


Figure 63. Deleting a Function from the "Edit the driver function list" Screen

- **Rename** — To rename a function on the list, click on its name to highlight it, then click the **Rename** button. On the prompt that opens, enter the new function name, then click **OK**.

4. When finished selecting and adding functions, click **Next** to continue. The "Specify the connection settings for the device" screen opens.
5. If you have not already done so, connect a USB A to mini-B cable or an RS-232 cable between the appropriate USB or serial ports on your computer and the MLC 62. (See "**Configuring the MLC via the USB Port**"or "**Wiring the Host/Config Port**" in the "Features, Installation, and Operation" section.)
6. In the Communication Settings section, select the radio button for port type to which you connected in step **5** (**USB Port** or **Serial Port**), and select the port name from the appropriate Port drop-down menu.
7. (Optional) If desired, you can verify the connection between the computer and the MLC and check device information (such as part number, model name, and firmware version), as follows:
   a. If you have multiple MLC 62s and are not sure if the one that you want to program is connected, select the **Flash LEDs while identifying** check box in the Connected Device Information section.
   b. Click **Identify**. If you selected the **Flash LEDs while identifying** check box, the front panel buttons blink while the computer is obtaining information about the connected MLC, showing you which MLC is connected to the selected port. The Connected Device Information field is populated with information about the connected MLC.

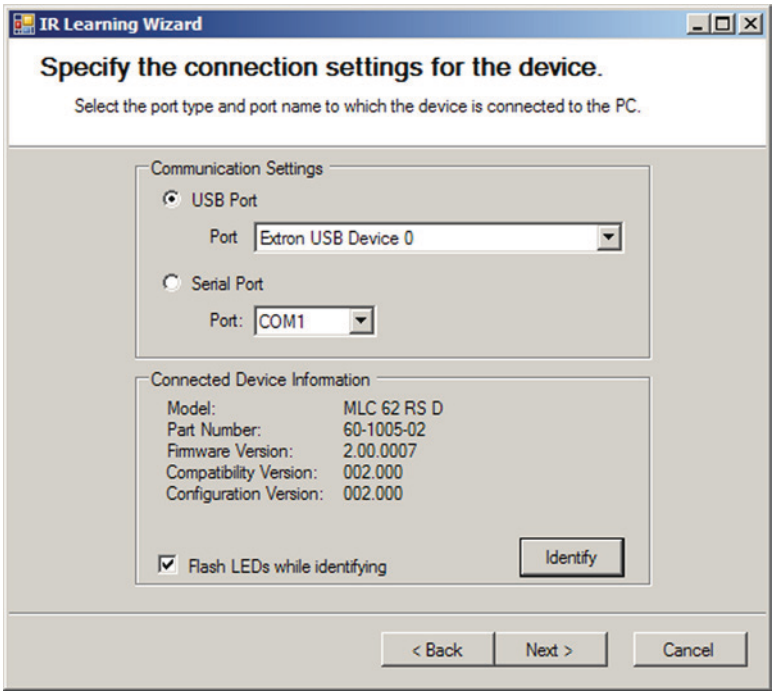


Figure 64. "Specify the connection settings for the device" Screen

8. Click **Next**. The "Learn the selected IR function(s)" screen displays a list of the functions that you selected previously, with all their check boxes selected. (If you added a function on the "Edit the driver function list" screen but cleared its check box, it does not appear on this list.) For each new function, "Unlearned" is displayed in the Status column.

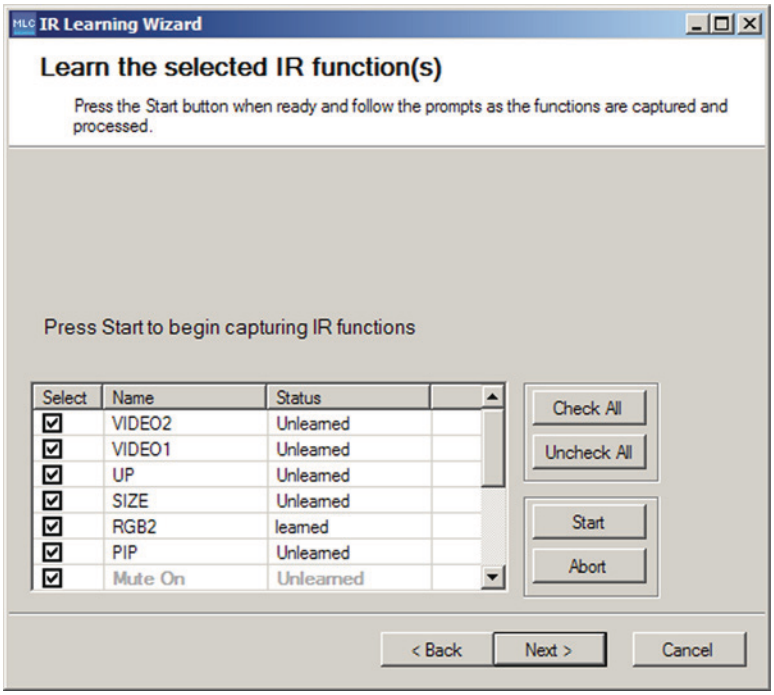


Figure 65. Example of a "Learn the selected IR function(s)" Screen

9. Make any of the following changes to the list of functions as desired:
   - **To learn all the commands without pausing**, leave all check boxes selected.
   - **To learn commands individually**, click **Uncheck All**, then select only the check box for the command that you want to learn. Repeat as needed for each function you want to learn.
   - **To sort the functions by name**, click on the Name column heading. Repeated clicking on the heading toggles between alphabetical and reverse order.
10. Prepare to aim the remote control at the IR sensor on the MLC. (For sensor location and access, see "**IR Learning**" in the "Features, Installation, and Operation" section.) Make sure that the desired functions to be learned are all checked.

    NOTE: All functions that are checked are learned one after the other in the order they are listed.

11. To start the IR Learning process, click **Start**. The message "Locate the remote control and aim it at the MLC's IR receiver" appears in the message field above the function list.

12. A delay of approximately 3 seconds occurs before capturing begins, allowing you some time to aim the remote control at the IR sensor. The IR Learning Wizard then guides you through the process of learning the checked functions one by one, as follows:

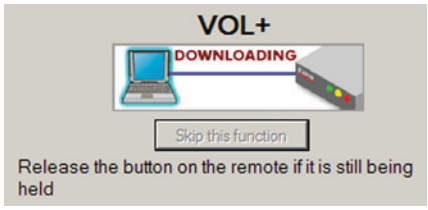
a. After 3 seconds, the name of the function being captured appears on the screen, along with a graphic indicating IR signals being sent. The message field displays "Press and hold the button for approximately 1 second then release."

Hold the remote control for the device between 4 and 14 inches from the IR sensor on the MLC and press the remote control button corresponding to the command to be learned.

Figure 66. Example of a Command Being Learned

While you are pressing the remote control button and the MLC is sensing an IR signal and capturing a function, the Activity LED on the MLC front panel blinks amber rapidly.

b. After approximately 1 second, (or when you see the graphic below the command name change to "Downloading" and the message field display "Release the button on the remote if it is still being held"), release the remote control button.



When the capture is complete, the graphic on the screen changes to "Capture Successful."

The check box for the learned command is cleared and the status of the command changes to "Learned."

NOTES: If you do not press a button within 7 seconds, or if the remote control is not correctly aimed at the MLC sensor, the capture procedure is timed out and the screen displays a message indicating that the function was not captured. The check box for the command remains checked, and the status for the function changes to "Failed."

If the remote control is aimed properly at the MLC IR sensor, the MLC front panel Activity LED blinks amber rapidly.

13. The wizard displays the next unlearned command on the list and restarts the process described in step **12**. Repeat this procedure for each desired command until all have been processed.

- If the MLC arrives at a command that you do not want it to learn at this time, click **Skip This Function**. The MLC skips over the function and gives it a status of "Skipped."
- Click **Abort** if you want to cancel the IR Learning process.
- If any captures fail, you can click **Start** again to retry capturing any unlearned commands. Check boxes for functions that failed to be captured remain selected.

The example below shows a "Learn the selected IR function(s)" screen after a completed IR Learning process.

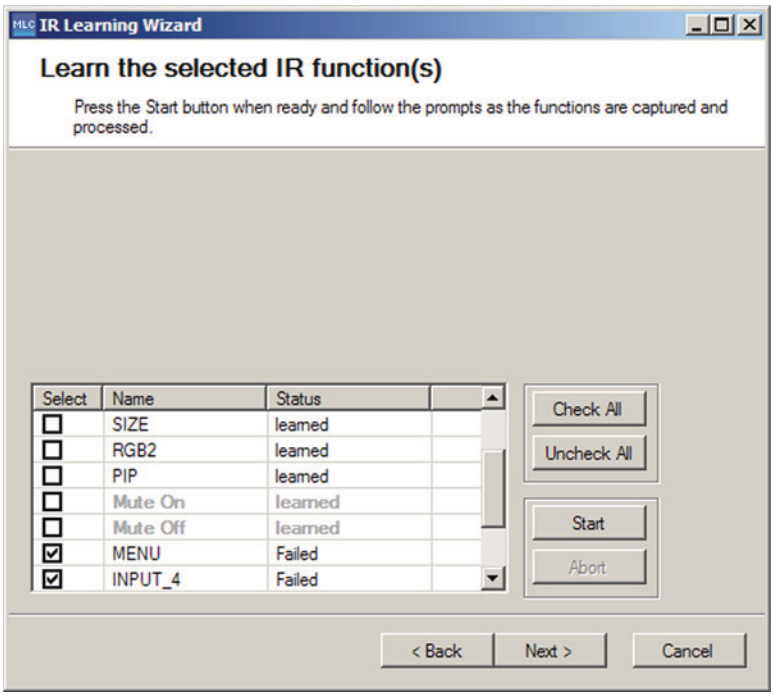


Figure 67. Example of a Completed IR Capture

NOTE: If you want to add more commands to the driver after completing the IR Learning process, click the **Back** button until the "Edit the driver function list" screen is displayed. Select the desired additional functions, then click **Next** until you return to the "Learn the selected IR function(s)" screen. Repeat step **12** to add the selected functions.

14. When finished, click **Next**. A summary page appears, showing properties of the device for which you created the new IR driver and the number of functions learned.

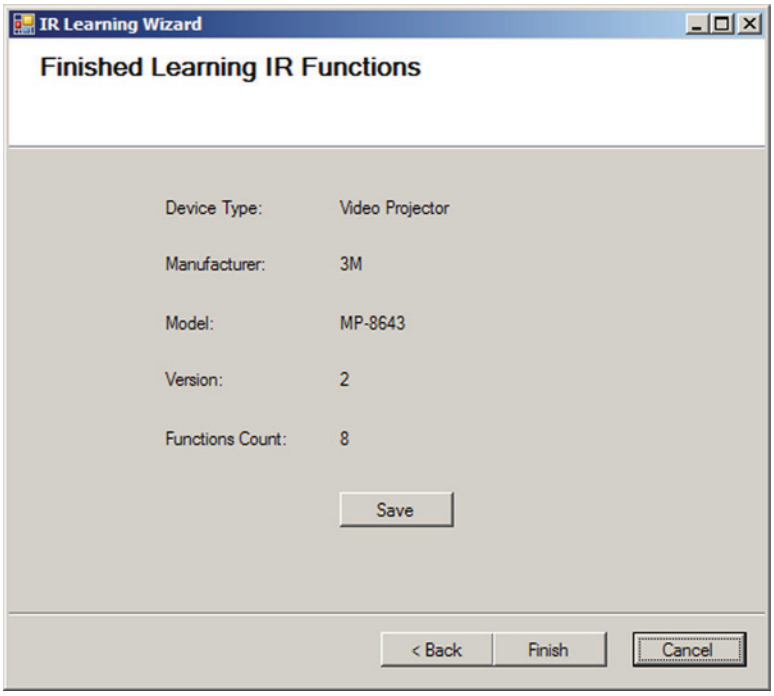


Figure 68. "Finished Learning IR Functions" Screen Example

15. On the Finished Learning IR Functions screen, click **Save** to save the new driver.
16. On the Save As window, save the new driver to your computer. The default (recommended) location is your Driver2 folder at:
    - **Windows XP** — c:\Documents and Settings\All Users\Shared Documents\Extron\Driver2
    - **Windows 7 and Vista** — c:\Users\Public\Documents\Extron\Driver2

    By default, the new IR driver is saved with an **.eir** extension.

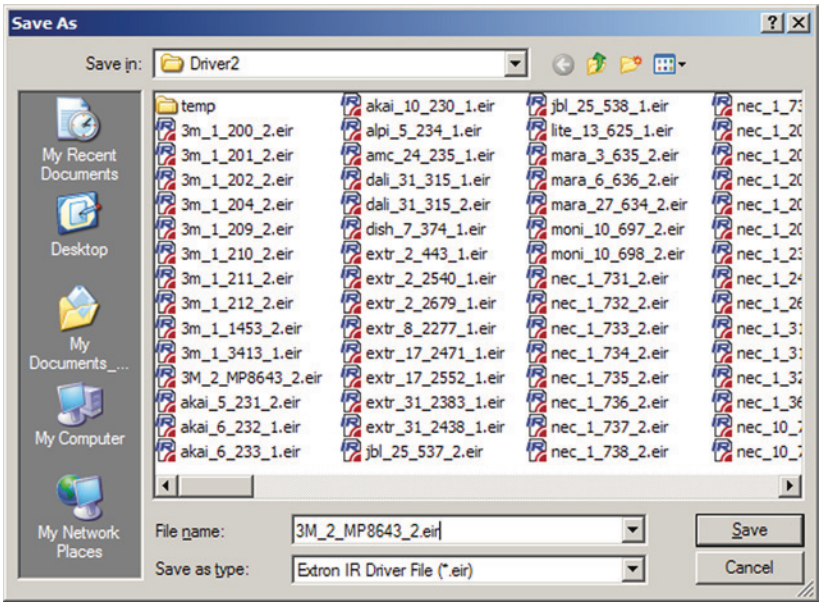


Figure 69. Save As Window for New Drivers

17. On the "Finished Learning IR Functions screen," click **Finish**. The IR Learning Wizard closes. The new driver is now selectable from the **Port Configuration** tab.

Editing an IR driver

If the Extron driver for your display device does not contain all the commands that you need, you can use IR Learning to edit the driver (whether or not it was created via IR Learning). You can edit an IR driver that you have already downloaded, or you can create a new one by copying and editing an existing one and saving it under a new name.

1. Open the IR Learning Wizard (see "**Configuring Using IR Learning**," earlier in this section).
2. On the "Select one of the starting options" screen, do the following:
   a. Select the **Edit an existing driver by browsing for an IR driver file** radio button. The **Browse** button and text field are enabled.

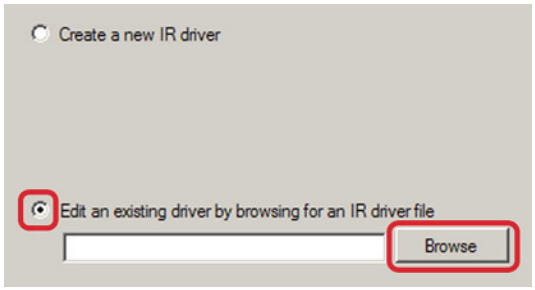


Figure 70. Browse Buttons on the "Select one of the starting options" Screen

   b. Click **Browse** to open the "Open an EIR Driver" window, which displays the contents of your Driver2 folder. If the desired driver is not in your Driver2 folder, browse to its location on your computer.
   c. Select the file name of the driver that you want to edit, then click **Open**.

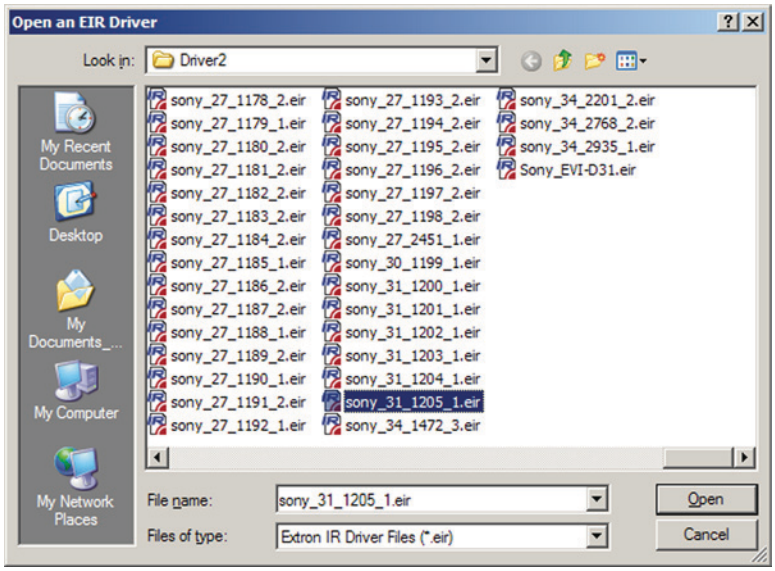


Figure 71. "Open an EIR Driver" Window

The "Select one of the starting options" screen is redisplayed, with the path to the driver shown in the text field next to the **Browse** button.

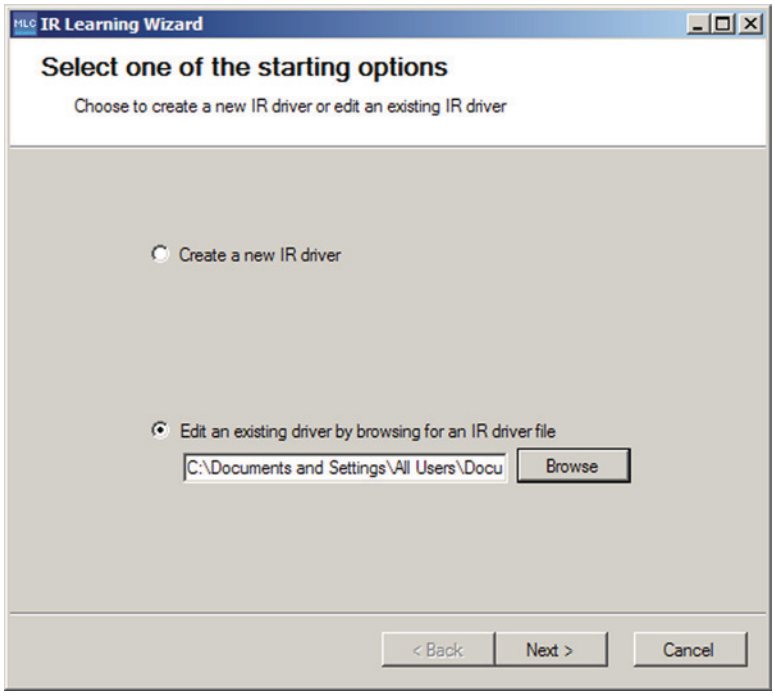

IR Learning Wizard
Select one of the starting options
Choose to create a new IR driver or edit an existing IR driver
Create a new IR driver
Edit an existing driver by browsing for an IR driver file
C:\Documents and Settings\All Users\Docu
Browse
< Back
Next >
Cancel

Figure 72. Path to the Driver in the Browse Field

3. Click **Next**. The "Device Description" screen opens, showing the device type, manufacturer, model, and version of the driver you selected to edit.
4. In the Driver Version field, select a version number for the updated driver. If you want to save previous versions of the driver you are editing, this number enables you to keep track of the updated versions you have created. This version number also appears in the Available Drivers list on the **Port Configuration** tab.

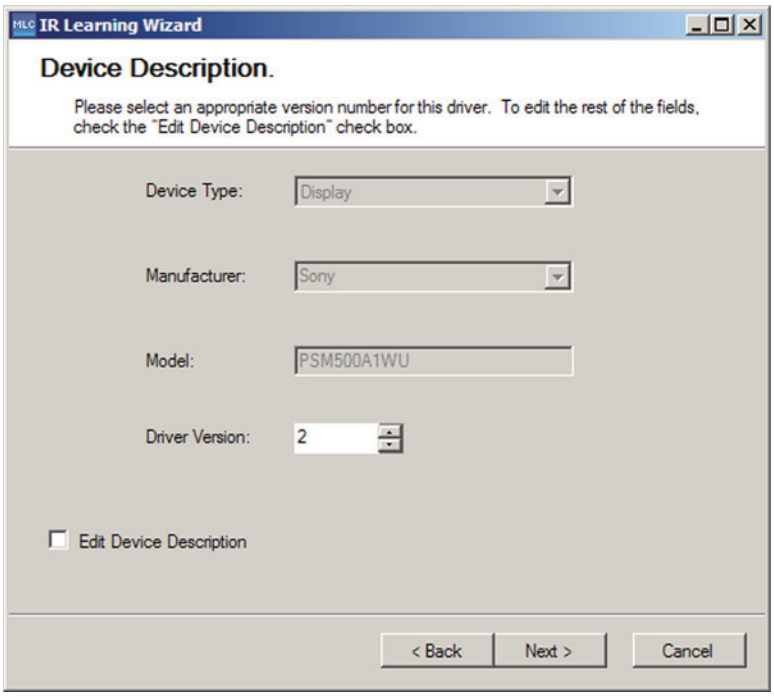


Figure 73. "Device Description" Screen

5. If you want to make any changes to the Device Type, Manufacturer, or Model fields for your selected driver, select the **Edit Device Description** check box and select or enter your edits in these three fields.

6. On the "Edit the driver function list" screen, the default template list of functions for your selected device is displayed. The Status column indicates which functions are currently part of the driver (Learned) and which can be added (Unlearned).

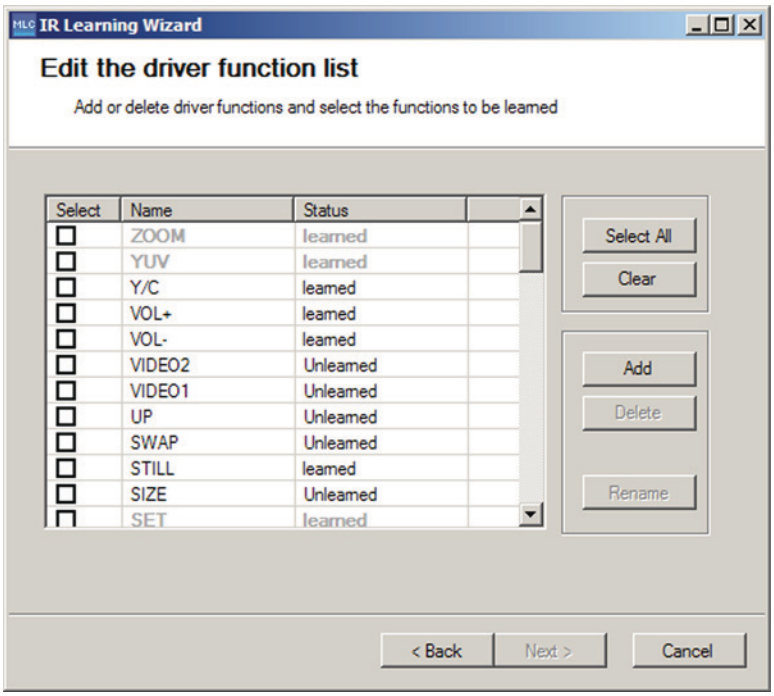
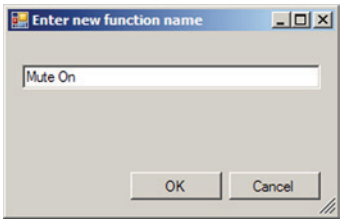


Figure 74. "Edit the driver function list" Screen

Edit the driver by doing any of the following:

- **Select unlearned functions to learn:** Select the check boxes for any unlearned functions that you want to include in the driver. Only the commands checked on this screen will be learned and added to the driver.
- **Select all functions to learn:** Click **Select All** to select the check boxes for all functions on the list.
- **Deselect all functions:** Click **Clear** to clear all selected check boxes.
- **Add a function to the list:** Click **Add** to add a function that does not currently appear on the command list. On the "Enter new function name" prompt, enter a name for the function you want to add, then click **OK**.

  The new function is added to the list on the "Edit the driver function list" screen, and its check box is automatically selected. (If you do not want to learn any of the new commands at this time, you can deselect their check boxes.)

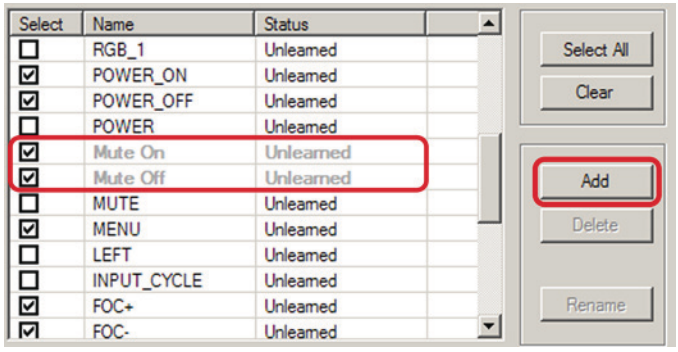


Figure 75. New Driver Functions on the "Edit the driver function list" Screen

NOTE: Functions that you add are shown in **gray**, because they are not part of the default list.

Functions whose names are shown in BLACK TEXT on this screen are part of the default template of functions for the driver. These default functions cannot be removed from the list or renamed; however, they can be left unchecked if you do not want to include them in the driver. Functions that are not part of the default template or have been added to the driver (shown in **grayed text**) can be deleted or renamed.

The default functions enable commands, such as those for volume and power, to be added to the front panel buttons when you are using the Display port. For more information on auto-filling commands, see "**Assigning driver commands to buttons**," earlier in this section.

- **Remove learned functions:** To remove a learned function from the driver, click on the function line, then click **Delete**.

  If the function is part of the default template list (black text), its status changes to Unlearned. If the function is not part of the default list (grayed text), it is removed from the screen.

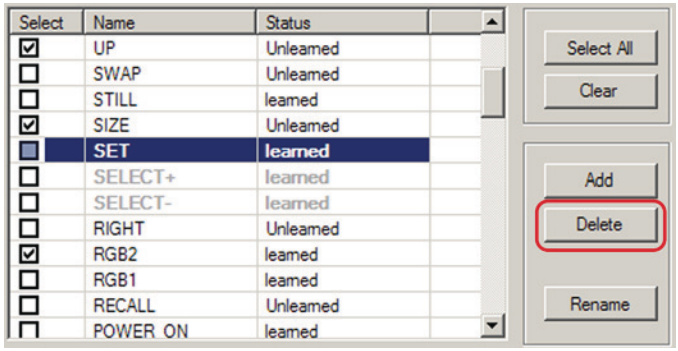


Figure 76. Removing a Function from a Driver

- **Rename a function:** To rename a function on the list, click on its name to highlight it, then click **Rename**. On the prompt that opens, enter the new name for the function, then click **OK**.

7. When finished selecting and adding functions, click **Next** to continue. The "Specify the connection settings for the device" screen opens.
8. If you have not already done so, connect a USB A to mini-B cable or an RS-232 cable between the appropriate USB or serial ports on your computer and the MLC 62. (See "**Configuring the MLC via the USB Port**"or "**Wiring the Host/Config Port**" in the "Features, Installation, and Operation" section.)
9. In the Communication Settings section, select the radio button for the port type to which you connected in step **7** (**USB Port** or **Serial Port**), and select the port name from the appropriate Port drop-down menu.
10. (Optional) If desired, you can verify the connection between the computer and the MLC and check device information (such as part number, model name, and firmware version), as follows:
    a. If you have multiple MLC 62s and are not sure if the one that you want to program is connected, select the **Flash LEDs while identifying** check box in the Connected Device Information section.
    b. Click **Identify**. If you selected the **Flash LEDs while identifying** check box, the front panel buttons blink while the computer obtains information about the connected MLC, showing you which MLC is connected to the selected port. The Connected Device Information field is populated with information about the MLC.

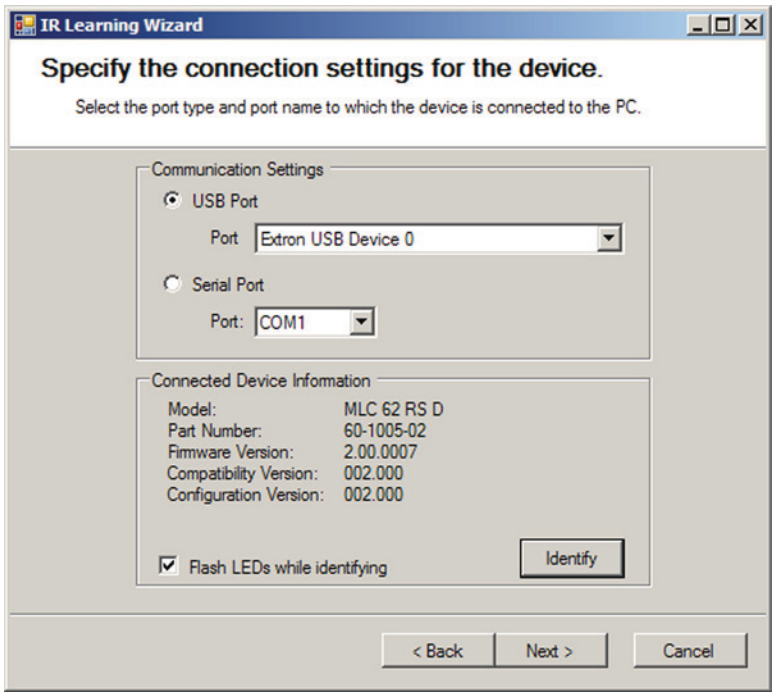


Figure 77. Information on the "Specify the connection settings for the device" Screen

11. Click **Next**. The "Learn the selected IR function(s)" screen displays a list of the functions that you selected previously, all with their check boxes selected. (If you added a function on the "Edit the driver function list" screen but cleared its check box, it does not appear on this list.) For each new function, Unlearned is displayed in the Status column.

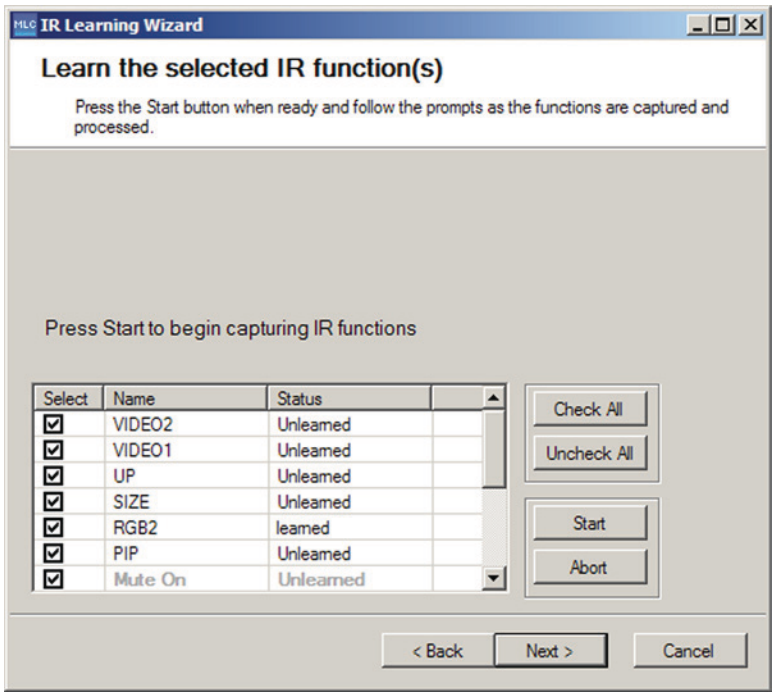


Figure 78. Example of a "Learn the selected IR function(s)" Screen

12. Make any of the following changes to the list of functions as desired:
    - **To learn all the commands without pausing**, leave all check boxes selected, or click **Check All**.
    - **To learn commands individually**, click **Uncheck All**, then select only the check box for the command that you want to learn. Repeat as needed for each function you want to learn.
    - **To sort the functions by name or by status**, click on the Name or Status column heading. Repeated clicking on the heading toggles between alphabetical and reverse alphabetical order.
13. Prepare to aim the remote control at the IR sensor on the MLC. (For sensor location and access, refer to "**IR Learning**" in the "Features, Installation, and Operation" section.) Make sure that the desired functions to be learned are all checked.

    NOTE: All functions that are checked are learned one after the other in the order they are listed.

14. To start the IR Learning process, click **Start**. The message "Locate the remote control and aim it at the MLC's IR receiver" appears in the message field above the function list.

15. A delay of approximately 3 seconds occurs before capturing begins, allowing you some time to aim the remote control at the IR sensor. The IR Learning Wizard then guides you through the process of learning the checked functions one by one:

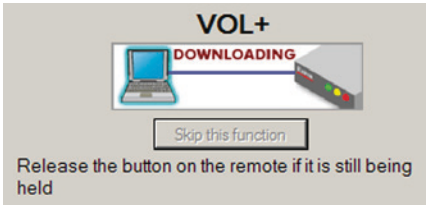
a. After 3 seconds, the name of the function being captured appears on the screen, along with a graphic indicating IR signals being sent. The message field displays the message "Press and hold the button for approximately 1 second then release."

Hold the remote control for the device between 4 and 14 inches from the IR sensor on the MLC and press the remote control button corresponding to the command to be learned.

Figure 79. Example of a Command Being Learned

While you are pressing the remote control button and the MLC is sensing an IR signal and capturing a function, the Activity LED on the MLC front panel blinks amber rapidly.

b. After approximately 1 second, (or when you see the graphic below the command name change to "Downloading" and the message field display "Release the button on the remote if it is still being held"), release the remote control button.



When the capture is complete, the graphic on the screen changes to "Capture Successful."

The check box for the learned command is cleared and the status of the command changes to Learned.

NOTES: If you do not press a button within 7 seconds, or if the remote control is not correctly aimed at the MLC sensor, the capture procedure is timed out and the screen displays a message indicating that the function was not captured. The check box for the command remains checked, and the status for the function changes to Failed.

If the remote control is aimed properly at the MLC IR sensor, the MLC front panel Activity LED blinks amber rapidly.

16. The wizard displays the next unlearned command on the list and restarts the process described in step **15**. Repeat this procedure for each desired command until all have been processed.

- If the MLC arrives at a command that you do not want it to learn at this time, click **Skip This Function**. The MLC skips over the function and gives it a status of Skipped.
- Click **Abort** if you want to cancel the IR Learning process.
- If any captures fail, you can click **Start** again to retry capturing any unlearned commands. Check boxes for functions that failed to be captured remain selected.

The example on the next page shows a "Learn the selected IR function(s)" screen after a completed IR Learning process.

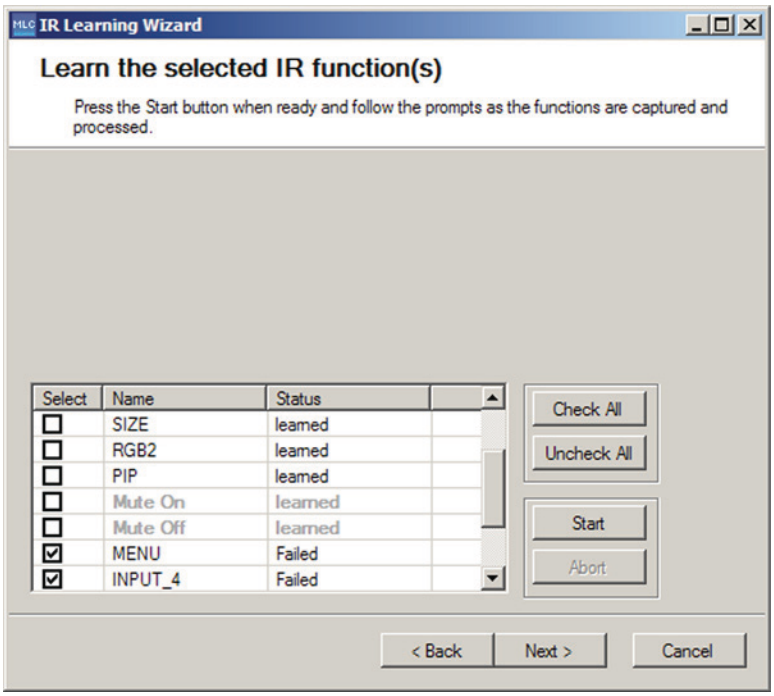


Figure 80. Example of a Completed IR Capture

NOTE: If you want to add more commands to the driver after completing the IR Learning process, click **Back** until the "Edit the driver function list" screen is displayed. Select the desired additional functions, then click **Next** until you return to the "Learn the selected IR function(s)" screen. Repeat step **15** to add the selected functions.

17. When finished, click **Next**. The "Finished Learning IR functions" summary screen appears, showing the properties of the device and the number of driver functions.

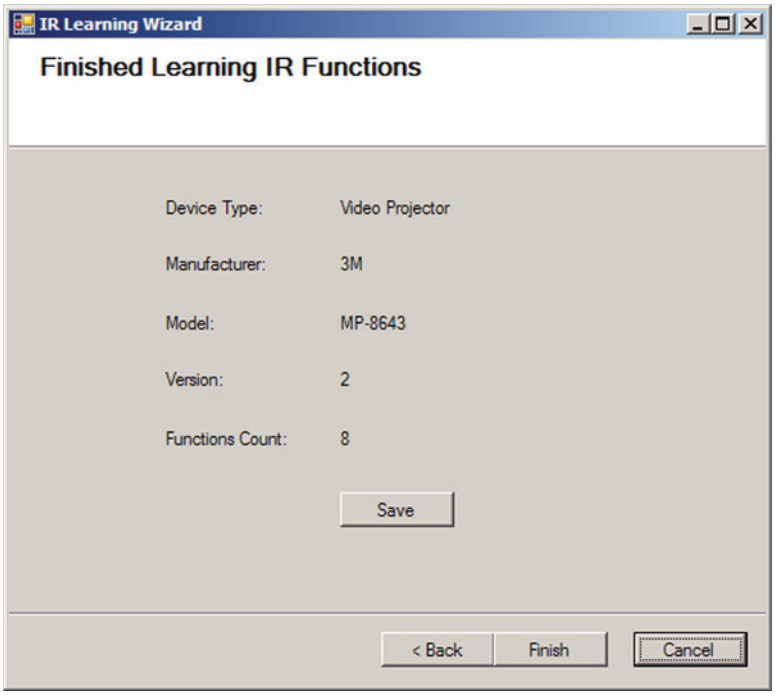


Figure 81. "Finished Learning IR Functions" Screen Example

18. On the "Finished Learning IR Functions" screen, click **Save** to save the changes made to the driver.

19. On the Save As window, save the edited driver to your computer. The default (recommended) location is your Driver2 folder at:

- **Windows XP** — c:\Documents and Settings\All Users\Shared Documents\Extron\Driver2
- **Windows 7 and Vista** — c:\Users\Public\Documents\Extron\Driver2

NOTE: If you want to retain the previous version of the driver as well as your new version, save the edited driver under a different name. All Extron driver file names must be saved with .eir extensions.

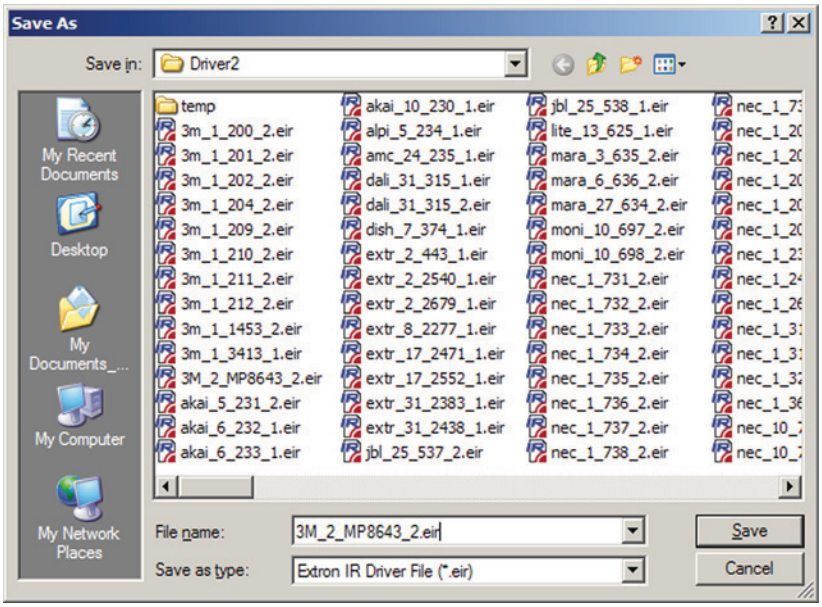


Figure 82. Save As Window for New Drivers

20. On the "Finished Learning IR Functions screen," click **Finish**. The IR Learning Wizard closes.

Uploading a Configuration to the MLC 62

Once a device configuration is completed, you must upload it to the MLC 62 in order for the MLC to be able to control your display device or switcher. A project can contain multiple configurations, but only one configuration at a time can exist on the MLC. When you upload a new configuration, it replaces the existing one.

To load a configuration to the MLC:

1. Save the current project containing the configuration that you want to upload.

2. Connect the MLC 62 to your computer via their USB or serial ports. See "**Wiring the Host/Config Port**" or "**Configuring the MLC via the USB Port**" in the "Features, Installation, and Operation" section, for connection information.

3. Do one of the following:

- In the configuration tree, select the device configuration that you want to upload to a connected MLC 62, then select **Upload Configuration...** from the Device menu or click the **Upload** button on the main toolbar.
- Right-click on either the device configuration name or on the name of its configured port, then select **Upload Configuration...** from the pop-up menu. (If you right-click on the port name, the menu that pops up has only the **Upload Configuration...** option.)

A prompt is displayed, cautioning you that the configuration you are uploading will replace the one currently on the device.

4. Click **Yes** on the prompt window. The Device Connection window opens.

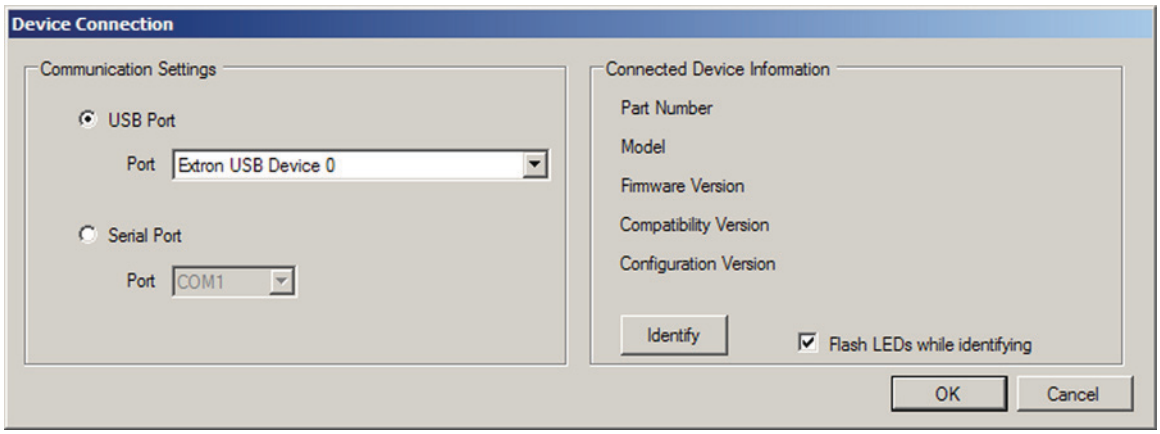


Figure 83. Device Connection Window

5. In the Communication Settings (left) section of the Device Connection window, select the port to which the MLC 62 that will receive the upload is connected:
   - Select the USB Port or Serial Port radio button for the type of port to which the target MLC is connected on your computer.
   - From the drop-down menu for the selected port type, choose the port name.
6. (Optional) If necessary, identify the MLC 62 device connected to the selected port.

   If you have multiple connected MLC 62s and do not know to which port the target MLC device is connected, the following procedure can help you to ensure that you have selected the port that is connected to the desired MLC 62 device:

   a. In the Connected Device Information (right) section, select the **Flash LEDs while identifying** check box.

   b. Click **Identify**. While the computer is obtaining information about the connected MLC 62, the front panel buttons blink, showing you which MLC is connected to the selected port. The fields in the Connected Device Information section are populated with information about the connected MLC.

   c. If the MLC connected to the selected port is not the desired one, repeat steps **a** and **b** until you locate the port with your target MLC.
7. When ready to upload the configuration, click **OK**. A window opens, displaying a progress bar for the upload process. While the upload is in progress, the buttons on the MLC front panel blink sequentially in clockwise order. When the upload is complete, the progress window closes.

Configuration File Management Procedures

The following operations can be performed on device configurations. Refer to the MLC 62 configuration program help file for details on these and other configuration-related procedures.

- **Add a configuration to the current project:**

  From the Edit menu or the Left Pane pop-up menu, select **Add Device...**, or click the **Add a new device configuration** button on the Main toolbar. Enter the requested device information on the Add Device window.

- **Get device information (part number, model, and so forth):**

  From the Device menu, select **Device Information...** . On the Device Information window, select the port on your computer to which the MLC is connected, then click **Get Info**.

- **Delete a configuration:**

  In the Device Configuration tree, click on the configuration name. Select **Delete Device** from the Edit menu or click the **Delete the selected device configuration or folder** button on the Device Configuration toolbar.

- **Rename a device configuration:**

  In the Device Configuration tree, click on the configuration name, then select **Rename Device** from the Edit menu. The configuration name becomes a text field. Type in the new name for the device configuration and press Enter on your computer keyboard.

- **Group device configurations in a folder:**

  Select **Add Folder** from the Edit menu or click the **Add Folder** button on the Device Configuration toolbar. A folder icon is added to the configuration tree with the default name of "NewLocation" in a text field with an editing cursor. In the folder name text field, enter a name for the folder.

  Add new device configurations or folders to the new folder or drag existing configurations to it as desired.

Resetting the Configuration

To reset the configuration on the MLC to the factory default configuration:

1. Ensure that the MLC is connected to the computer via the USB or Host/Config port.
2. Open the configuration software.
3. From the Device menu, select **Reset Device...**, or click the **Reset the device** configuration button on the Device Configuration toolbar.

   A prompt window opens, cautioning you that the current configuration on the connected MLC will be replaced by the factory defaults of the device. Click **Yes** to proceed with the reset. The Device Connection window opens.

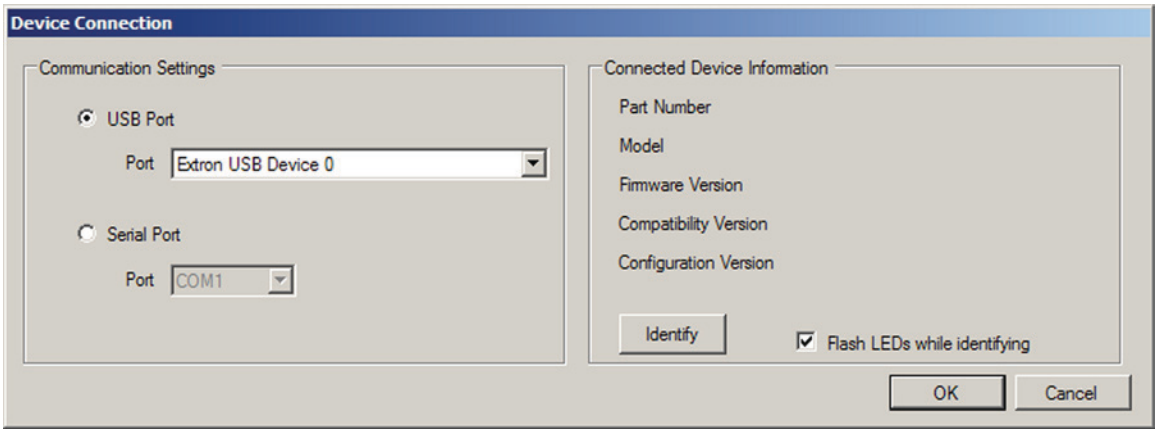


Figure 84. Device Connection Screen

4. In the Communication Settings (left) section of the Device Connection window, select the port to which the MLC is connected:
   a. Select the **USB Port** or **Serial Port** radio button for the type of port to which the target MLC is connected on your computer.
   b. From the drop-down menu for the selected port type, choose the port name.
5. (Optional) If necessary, identify the MLC 62 device connected to the selected port.

   If you have multiple connected MLC 62s and do not know to which port the target MLC device is connected, the following procedure can help you to ensure that you have selected the right port:
   a. In the Connected Device Information (right) section, select the **Flash LEDs while identifying** check box.
   b. Click **Identify**. While the computer is obtaining information about the connected MLC 62, the front panel buttons blink, showing you which MLC is connected to the selected port. The fields in the Connected Device Information section are populated with information about the connected MLC.
   c. If the MLC connected to the selected port is not the desired one, repeat steps **a** and **b** until you locate the port with your target MLC.
6. Click **OK**. A window opens, displaying a progress bar for the reset. While the reset is in progress, the MLC front panel buttons light, then go dark.
7. When the reset is complete, the progress window closes and a prompt appears with the message "Reset Device Successful." Click **OK** to close the prompt.

   The **Front Panel** tab displays the default configuration.

SIS Control

The MLC 62 can be remotely controlled via a host computer or other control device that is attached to the MLC rear panel Host/Config port. You can issue Simple Instruction Set (SIS) commands to the MLC via the RS-232 or USB interface of your computer or control device with a communication software program such as HyperTerminal or DataViewer. This section contains a list of the SIS commands available for the MLC 62 and describes procedures for issuing them. The following topics are covered:

- **Host-to-Controller Communications**
- **Using the Command/Response Table**
- **Command/response Table for SIS Commands**

Host-to-Controller Communications

SIS commands consist of strings of one or more characters per field. No special characters are required to begin or end a command sequence. When the MLC determines that a command is valid, it executes the command and sends a response to the host device.

Most responses from the MLC 62 to the host end with a carriage return and a line feed (CR/LF = ↵), which signals the end of the response character string.

Controller-initiated Messages

When a local event such as a front panel button press takes place, the MLC 62 responds by sending a message to the host, indicating what selection was entered. No response is required from the host.

The MLC sends the following copyright message only when it first powers on.

(c) Copyright 2010, Extron Electronics, MLC 62, V*x.xx*, 60-100*n-nn*

where V*x.xx* is the firmware version number and *n* is the MLC 62 model number.

This message does not appear with a USB connection.

Error Responses

If the MLC 62 is unable to execute a command it receives because the command is invalid or contains invalid parameters, the controller returns an error response to the host. This response consists of the letter **E** followed by a number and a carriage return with a line feed. The following error response codes can be returned:

E10 – Invalid command or parameter

E13 – Invalid value (out of range)

E14 – Not valid for this configuration

E22 – Busy

Using the Command/Response Table

The command/response table on the following pages lists valid ASCII command codes, the responses of the MLC to the host, and a description of the command function or the results of executing the command. The ASCII to HEX conversion table below is for use with the command/response table.

ASCII to HEX Conversion Table																Esc	1B	CR	ØD	LF	ØA
Space	2Ø	!	21	"	22	#	23	$	24	%	25	&	26	'	27						
(	28	)	29	*	2A	+	2B	,	2C	-	2D	.	2E	/	2F						
Ø	3Ø	1	31	2	32	3	33	4	34	5	35	6	36	7	37						
8	38	9	39	:	3A	;	3B	<	3C	=	3D	>	3E	?	3F						
@	4Ø	A	41	B	42	C	43	D	44	E	45	F	46	G	47						
H	48	I	49	J	4A	K	4B	L	4C	M	4D	N	4E	O	4F						
P	5Ø	Q	51	R	52	S	53	T	54	U	55	V	56	W	57						
X	58	Y	59	Z	5A	[	5B	\	5C	]	5D	^	5E	_	5F						
`	6Ø	a	61	b	62	c	63	d	64	e	65	f	66	g	67						
h	68	i	69	j	6A	k	6B	l	6C	m	6D	n	6E	o	6F						
p	7Ø	q	71	r	72	s	73	t	74	u	75	v	76	w	77						
x	78	y	79	z	7A	{	7B	|	7C	}	7D	~	7E	DEL	7F						

Symbol definitions

↵ = CR/LF (carriage return/line feed) (hex 0D 0A)

← = Soft carriage return (no line feed) (hex 0D; Web |)

• = Space

Esc = Escape key (hex 1B; Web W)

X1 = Button number: 01, 02, 03, 04, 05, 06, 07, or 08
Buttons are numbered from front panel top left (01) to bottom right (08).

X2 = Relay port number
1 = Relay 1
2 = Relay 2

X3 = Pulse length in increments of 0.5 seconds. The default is 1 (0.5 seconds).
1 = 0.5 seconds
2 = 1 second
...

255 ≈ 130 seconds

X6 = Digital input state
0 = low
1 = high

X8 = Firmware version number (displayed to two decimal places: *x.xx*)

X9 = Volume range level (a three digit number; for serial drivers with volume tables only)

NOTE: Only positive values are allowed. The volume table levels start with zero.

X11 = Lockout (executive) mode
0 = Off
1 = On

X12 = Name of the MLC device.

May be up to 24 alpha-numeric characters. The first character must be alphabetic; the last character cannot be a hyphen or minus sign. No blank or space characters are permitted.

X23 = Status
0 = disengaged (default)
1 = engaged

X25 = Firmware compatibility version number (a three digit number listed to three decimal places: *nnn.nnn*)

X26 = Device (image) compatibility version number (a three digit number listed to three decimal places: *nnn.nnn*)

X49 = Default product name: MLC-62-RS or MLC-62-IR

X212 = LED status

Displayed as a 32-digit number, each digit of which represents the status of an LED on the MLC 62 front panel. In the X212 number, the LED statuses are represented in descending order from 32 to 1; that is, the first digit represents LED 32, the second digit represents LED 31, and so forth. The last digit represents LED 1.

The LEDs are numbered as follows:
1 – Transmit red
2 – Transmit green
3 through 6 – Four LEDs behind "Display" text
7 – Button row 1, first LED (button 1)
8 – Button row 2, second LED (button 2)
9 through 12 – Four LEDs behind "Volume" text
13 through 17 – Volume level indicator LEDs 1 through 5
18 – Button row 2, first LED (button 3)
19 – Button row 2, second LED (button 4)
20 – Button row 3, first LED (button 5)
21 – Button row 3, second LED (lights only if buttons 5 and 6 are combined)
22 – Button row 3, third LED (button 6)
23 – Button row 4, first LED (button 7)
24 – Button row 4, second LED (lights only if buttons 7 and 8 are combined)
25 – Button row 4, third LED (button 8)
26 through 32 – Not used (always 0)

Each digit in the X212 number can be 0 through 4, representing the following possible LED statuses:
0 = off
1 = dim
2 = on (bright)
3 = slow blink
4 = fast blink

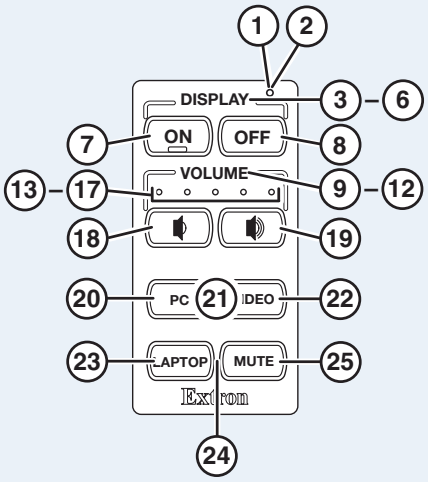
NOTE: Unless otherwise indicated, commands are **not** case sensitive.

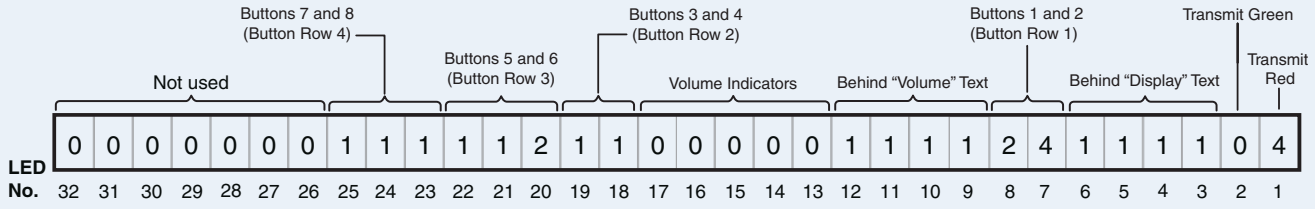
Command/response Table for SIS Commands

Command	ASCII Command (Host to unit)	Response (Unit to host)	Additional description
Button selection			
Trigger a button	Esc B * X1 BTNO ←	BtnoB * X1 ↵	Execute the command(s) programmed to button X1. (This command produces the same results as pressing button X1 on the front panel). X1 = 01, 02, 03, 04, 05, 06, 07, or 08.
NOTE: Use the MLC 62 Windows-based configuration software to configure the buttons with commands.			
Example	Esc B * 5BTNO ←	BtnoB * 05 ↵	Perform commands assigned to button 5.
Discrete audio volume adjustment (devices with volume tables)			
Set volume level[14]	X9 V	Vol X9 ↵	Set volume table level to X9. X9 can be up to three digits; leading zeroes are optional.
NOTE: Only positive values are allowed. Volume table levels start with 0 (zero). Setting a discrete volume level that is outside of the volume table range results in an E13 error response.			
Increment volume level	+V	Vol X9 ↵	Increase the volume by one volume table increment. X9 = current volume level.
Decrement volume level	–V	Vol X9 ↵	Decrease the volume by one volume table increment.
View current volume level	V	X9 ↵	Display the current volume level.
Increase and decrease audio volume (devices without volume tables)			
NOTE: Attempts to enter an X9 V (Set volume level) command to set a discrete volume level on a device whose driver does not include a volume table result in an E14 error response.			
Increment volume level	+V	Vol+	Increase the volume level by one step.
Decrement volume level	–V	Vol–	Decrease the volume level by one step.
View volume level	V	_ _ _	
Relay functions			
Pulse relay	X2 * 3 * X3 O	Rly X2 * X23 ↵	Set the length X3 of the pulse specified for relay port X2. Values for X3 represent increments of 0.5 seconds and can range from 1 (0.5 seconds) to 255 (approximately 130 seconds). The MLC response includes status X23 for the specified relay port. For X2: 1 = Relay 1; 2 = Relay 2. For X23: 0 = open (disengaged; 1 = closed (engaged).
Example:	2*3*1O	Rly2*1 ↵	Relay port 2 will remain closed for pulse intervals of 0.5 seconds.
Toggle relay	X2 * 2 O	Rly X2 * X23 ↵	Close and open relay port X2. Each time the command is issued, the MLC toggles between the On and Off states. The MLC response includes status X23 for the specified relay port.
Force relay on	X2 * 1 O	Rly X2 * 1 ↵	Set relay port X2 to remain closed (on).

Command	ASCII Command (Host to unit)	Response (Unit to host)	Additional description
Relay functions (continued)			
Force relay off	X2 * 0 O	Rly X2 * 0 ↵	Set relay port X2 to remain open (off).
View relay state	X2 O	X23 ↵	Show state X23 of relay port X2. For X23: 0 = open; 1 = closed.
Digital Input data port			
View digital input state	]	X6 ↵	View status X6 of the Digital Input port. For X6: 0 = low; 1 = high.
Front panel lockout (executive mode)			
Off	0X	Exe 0 ↵	Unlock front panel buttons.
On	1X	Exe 1 ↵	Lock all front panel buttons.
View	X	X11 ↵	View front panel lockout status. X11. For X11, 0 = off; 1 = on.
Device naming			
Set unit name	Esc X12 CN	Ipn • X12 ↵	Set name X12 for the MLC. X12 can be up to 24 alpha-numeric characters. The first character must be alphabetic; the last character cannot be a hyphen or minus sign. No blank or space characters are permitted.
Set unit name to factory default	Esc • CN ←	Ipn • X49 ↵	Set the name of the MLC to its factory default name X49. X49 is: • **MLC-62-RS** for RS models • **MLC-62-IR** for IR models..
View unit name	Esc CN ←	X12 ↵	Show the name of the MLC.
Firmware version/part number/information			
Query firmware version	Q	X8 ↵	Display firmware version X8 to two decimal places.
Example	Q	1.00 ↵	
Query firmware compatibility version	**Q	X25 ↵	Display firmware compatibility version X25. The version number
Query image compatibility version	Esc DIMQ ←	X26 ↵	View the device (image) compatibility version number X26.
NOTE: Compatibility version numbers are used to track and check for compatibility between the configuration software, firmware, and device (image) versions on the MLC. The device and firmware compatibility numbers (X25 and X26) each consist of six digits. The first three digits are called "major numbers," and the three digits following the decimal point are "minor numbers." Whenever the major numbers match, they are considered to be compatible. The minor numbers are used to track changes that have been made but do not affect compatibility. Refer to "Updating Firmware" in the MLC 62 help file for more information on checking compatibility.			
Example	Esc DIMQ ←	002.100 ↵	Display the current device compatibility number 002.100. Major number is 002; minor number is 100.
Request controller part number	N	60-100*n-nn* ↵	Show the MLC 62 part number: MLC 62 RS D = 60-1005-02 MLC 62 RS EU = 60-1005-35 MLC 62 IR D = 60-1006-02
Query model name	I	MLC•62•RS•D ↵ or MLC•62•RS•EU ↵ or MLC•62•IR•D ↵	Show the name of the MLC 62 model.

Command	ASCII Command (Host to unit)	Response (Unit to host)	Additional description
Reset/Erase			
Configuration reset	Esc ZXXX ←	ZapXXX ↵	Reset the MLC 62 configuration to the factory default.
Query LED status			
View LED status The LEDs are numbered as follows: 1 =Transmit red 2 = Transmit green 3-6 = Display text LEDs 1 through 4 7 = Button row 1, first LED 8 = Button row 1, second LED 9-12 = Volume text LEDs 1 through 4 13-17 = Volume LEDs 1 through 5 18 = Button row 2, first LED 19 = Button row 2, second LED 20 = Button row 3, first LED 21 = Button row 3, second LED 22 = Button row 3, third LED 23 = Button row 4, first LED 24 = Button row 4, second LED 25 = Button row 4, third LED 26-32 = Not used (always 0)	Esc LC←	X212 ↵	X212 is a 32-digit number, of which each digit represents the status of an LED on the MLC 62 front panel. In X212, the LEDs are represented in descending order from 32 to 1; that is, the first digit represents LED 32, the second digit represents LED 31, and so on. The last digit represents LED 1. Each digit in X212 can be 0 through 4, representing the following possible LED statuses: 0 = off 1 = dim 2 = on (bright) 3 = slow blink 4 = fast blink
Example	Esc LC←	**00000001111121100000111124111104** ↵	(This example is illustrated in the diagram below.) In this LED status number, for example, the first digit on the right (LED 1) represents the red Transmit LED. Its status is 4, which indicates that it is blinking rapidly. The LEDs behind the display text (3 through 6) have a status of 1, which means they are dimly lit.




Buttons 7 and 8 (Button Row 4)
Buttons 5 and 6 (Button Row 3)
Buttons 3 and 4 (Button Row 2)
Buttons 1 and 2 (Button Row 1)
Transmit Green
Transmit Red
Not used
Volume Indicators
Behind "Volume" Text
Behind "Display" Text
0 0 0 0 0 0 0 1 1 1 1 1 2 1 1 0 0 0 0 0 1 1 1 1 2 4 1 1 1 1 0 4
LED No.
32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

Specifications, Part Numbers, and Accessories

This section contains the specifications for all models of the MLC 62 and lists names and part numbers of included parts and optional accessories for the product. Topics that are covered include:

- **Specifications — MLC 62 Series**
- **Part Numbers and Accessories**

Specifications — MLC 62 Series

Control — host ports

Serial control port	1 bidirectional RS-232 on a 3.5 mm captive screw connector, 3 pole
Baud rate and protocol	9600 baud, 8 data bits, 1 stop bit, no parity
Serial control pin configuration	Pin 1 = Tx, pin 2 = Rx, pin 3 = GND
USB control ports	
Decora® models	1 front panel female mini USB B
MK and EU models	1 side panel female mini USB B
USB standards	USB 2.0, low speed
IR learning frequencies	30 kHz to 60 kHz
IR learning distance	4" (10 cm) to 14" (36 cm) from the receiver (on front panel for Decora models, side panel for MK and EU models)
Program control	Extron configuration program for Windows Extron Simple Instruction Set (SIS)

Control — serial port (RS models)

Display control port	(1) 3.5 mm captive screw connector, 2 pole for unidirectional RS-232 control (±5 V)
Baud rate and protocol (RS-232)	9600 (default), 19200, 38400, 57600, 115,200 baud; 8 (default) or 7 data bits; 1 stop bit; no parity (default), or even or odd parity

Control — IR port (IR models) or IR/serial port (RS models)

IR control port	(1) 3.5 mm captive screw connector, 2 pole for IR or IR/Serial* (transmit only) TTL level (0 to 5 V) modulated infrared control (all models) from 30 kHz up to 60 kHz, or ±5 V RS-232 control (RS models, transmit only) *For RS models, IR/serial ports are configurable via software, serial communication is the default.
Baud rate and protocol	For RS models: 9600 (default), 19200, 38400, 57600, 115,200 baud; 8 (default) or 7 data bits; 1 stop bit; no parity (default), or even or odd parity

Control — relay (RS models)

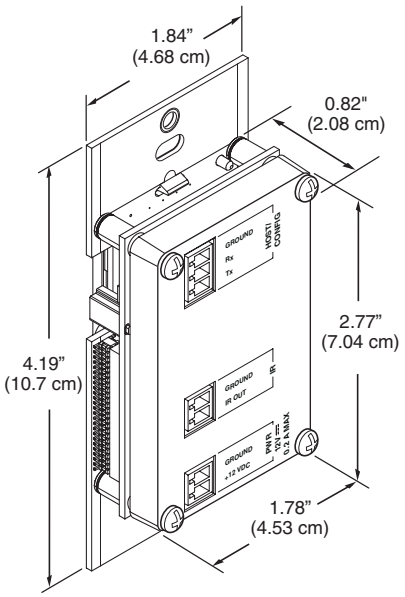
Number/type	2 momentary or latching (configurable via software)
Connector	(1) 3.5 mm captive screw connector, 3 pole
Contact rating	24 V, 1 A

Control — digital input monitoring port (RS models)

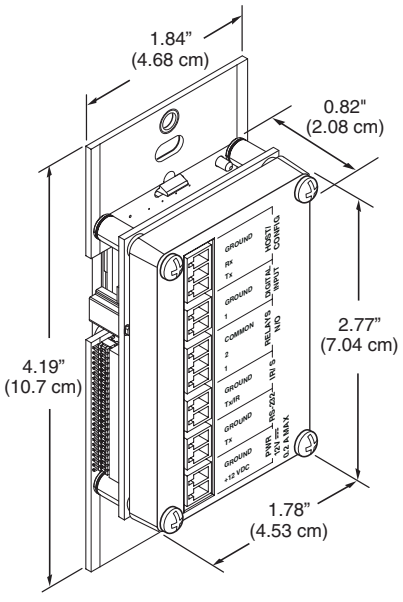
Number/type	1 digital input (configurable)
Connector	(1) 3.5 mm captive screw connector, 2 pole
Digital inputs	
Input voltage range	0-24 VDC
Input impedance	12k ohms
Programmable pullup	2k ohms to +5 VDC
Threshold low to high	>1.5 VDC
Threshold high to low	<1.0 VDC

General

External power supply	100 VAC to 240 VAC, 50-60 Hz, external; to 12 VDC, 1 A, regulated
Power input requirements	12 VDC, 0.4 A, max.
Temperature/humidity	Storage: -40 to +158 °F (-40 to +70 °C) / 10% to 90%, noncondensing Operating: +32 to +122 °F (0 to +50 °C) / 10% to 90%, noncondensing
Cooling	Convection, no vents
Mounting	
Rack mount	No
Furniture or wall mount	
Decora models	Mounts in a standard 1 gang US electrical junction box (1.50" depth) or with included mud ring.
EU models	Mounts in a standard 1 gang EU electrical junction box with 60 mm mounting centers (40 mm depth). An adapter frame is included.
MK models	Mounts to a standard 47 mm deep MK electric type British standard wall box.
Enclosure type	Plastic
Enclosure dimensions	
MLC 62 IR D, MLC 62 RS D	
Faceplate	2.6" H* x 1.3" W x 0.2" D (6.6 cm H* x 3.3 cm W x 0.4 cm D) (Fits the opening in a 1 gang Decora faceplate. *Height is 2.8" [7.0 cm] and width is 1.5" [3.8 cm] including outer shoulders.)
Device	2.8" H x 1.8" W x 0.9" D (7.0 cm H x 4.5 cm W x 2.1 cm D) (Overall rear dimensions, including connectors. Allow at least 1.5" [3.7 cm] depth in the wall or furniture for device and cable clearance.)



MLC 62 IR D
Rear

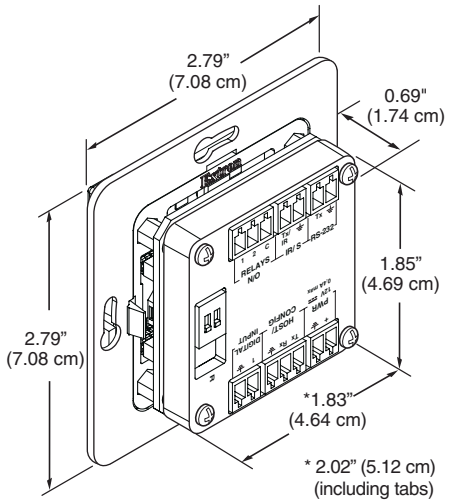


MLC 62 RS D
Rear

MLC 62 RS EU

Faceplate ..... 2.2" H x 2.2" W x 0.3" D (1-gang EU, fits a Jung AS 500 wallplate)
(5.5 cm H x 5.5 cm W x 0.7 cm D)

Device..... 1.9" H x 2.0" W x 0.7" D
(4.8 cm H x 5.2 cm W x 1.8 cm D)
(Overall rear dimensions, including connectors. Allow at least 1.25" [3.2 cm] depth in the junction box for device and cable clearance.)



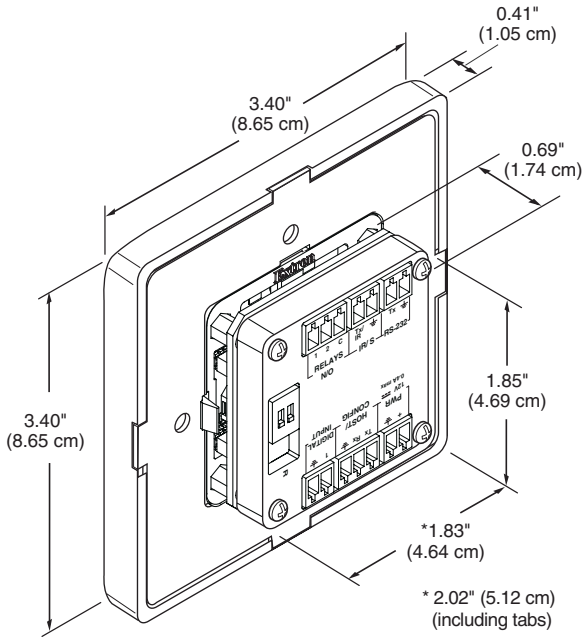
MLC 62 EU
Rear

MLC 62 RS MK

Faceplate ..... 2.2" H x 2.2" W x 0.3" D
(5.5 cm H x 5.5 cm W x 0.7 cm D)

Wall frame ..... 3.4" H x 3.4" W x 0.4" D
8.6 cm H x 8.6 cm W x 1.1 cm D

Device..... 1.9" H x 2.0" W x 0.7" D
(4.8 cm H x 5.2 cm W x 1.8 cm D)
(Overall rear dimensions, including connectors. Allow at least 1.25" [3.2 cm] depth in the junction box for device and cable clearance.)



MLC 62 RS MK
Rear

Product weight	
MLC 62 IR D, MLC 62 RS D	1.0 lb (0.5 kg)
MLC 62 RS EU	1.0 lb (0.5 kg)
MK models	1.0 lb (0.5 kg)
Shipping weight	3 lbs (2 kg)
Vibration	ISTA 1 A in carton (International Safe Transit Association)
Regulatory compliance	
Safety	CE, c-UL, UL
EMI/EMC	CE, C-tick, FCC Class A, ICES, VCCI Class A
Accessibility	Section 508 of the Rehabilitation Act (29 U.S.C. 794d)
MTBF	30,000 hours
Warranty	3 years parts and labor

NOTES: All nominal levels are at ±10%.

Specifications are subject to change without notice.

Part Numbers and Accessories

Included Parts

These items are included with the MLC 62 Series controller:

MLC 62 RS D

Included Parts	Replacement Part Number
MLC 62 RS D MediaLink Controller (Includes 1 black and 1 white eight-button faceplate)	60-1005-02
12 VDC, 1 A external power supply (PS 1210C)	70-775-01
Front faceplate, black, eight-button (Includes additional buttons with assorted labels)	70-688-12
Front faceplate, white, eight-button (Includes additional buttons with assorted labels)	70-688-12
Decora wallplate, black	
Decora wallplate, white	
Extron Tweeker (slotted Philips #1 screwdriver)	
MLC 62 Series Setup Guide	
1-gang Decora-style mud ring/mounting bracket (black)	
(2) 3.5 mm 3-pole captive screw connectors	
(4) 3.5 mm 2-pole captive screw connectors	
Extron Software Products disc	

MLC 62 IR D

Included Parts	Replacement Part Number
MLC 62 IR D MediaLink Controller (Includes 1 black 1 white six-button faceplate)	60-1006-02
12 VDC, 1 A external power supply (PS 1210C)	70-775-01
IR Emitter and Shield kit	70-283-01
Front faceplate, black, six-button (Includes additional buttons with assorted labels)	70-688-02
Front faceplate, white, six-button (Includes additional buttons with assorted labels)	70-688-02
Decora wallplate, black	
Decora wallplate, white	
Extron Tweeker (slotted Philips #1 screwdriver)	
MLC 62 Series Setup Guide	
1-gang Decora-style mud ring/mounting bracket (black)	
(1) 3.5 mm 3-pole captive screw connectors	
(2) 3.5 mm 2-pole captive screw connectors	
Extron Software Products disc	

MLC 62 RS EU

Included Parts	Replacement Part Number
MLC 62 RS EU MediaLink Controller (RAL9010 white) (Includes 1 six-button and 1 eight-button faceplate)	60-1005-35
12 VDC, 1 A external power supply (PS 1210C)	70-775-01
Front faceplate, 6 button (RAL9010 white)	
Front faceplate, 8 button (RAL9010 white)	
Jung AS500 wall frame (RAL9010 white)	
Extron Tweeker (slotted Philips #1 screwdriver)	
MLC 62 Series Setup Guide	
(2) 3.5 mm 3-pole captive screw connectors	
(4) 3.5 mm 2-pole captive screw connectors	
Extron Software Products disc	

MLC 62 RS MK

Included Parts	Replacement Part Number
MLC 62 RS MK MediaLink Controller (white) (Includes 1 six-button and 1 eight-button faceplate)	60-1005-23
12 VDC, 1 A external power supply (PS 1210C)	70-775-01
Front faceplate, 6-button (white)	
Front faceplate, 8-button (white)	
Front wall frame (white)	
Extron Tweeker (slotted Philips #1 screwdriver)	
MLC 62 Series Setup Guide	
(2) 3.5 mm 3-pole captive screw connectors	
(4) 3.5 mm 2-pole captive screw connectors	
Extron Software Products disc	

Accessories

These optional items can be ordered separately:

Accessories	Part Number	For Model
English button kit (MLC 62 RS EU and MLC 62 RS MK models)	70-728-01	MLC 62 RS EU, MLC 62 RS MK
French/German button kit (MLC 62 RS EU and MLC 62 RS MK models)	70-728-11	MLC 62 RS EU, MLC 62 RS MK
MLA VC10 Volume Control Module	60-502-01	All
MPA 152 Stereo Power Amplifier, 15 watts per channel	60-844-01	All
MPA 401 Mono Power Amplifier, 40 watts per channel	60-845-01	All
MPA 181T Mono Integrated Mini Power Amplifier, 70 V , 18 watts per channel	60-747-01	All
MLS 100A Four Input Stereo Audio MediaLink Switcher	60-497-01	All
MLS 102 VGA Two Input VGA and Four Input Stereo Audio MediaLink Switcher	60-497-04	All
MLS 304SA Four Input MediaLink Switcher with stereo amplifier	60-550-02	All
USB CFG Cable, type A to mini-B configuration cable	26-654-06	All
MLC IR/RS-232 one projector communication cable, plenum 35'	26-621-35	All
MLM 62 D 8B faceplate replacement kit, 8-button (MLC 62 D models only)	70-688-12	MLC 62 RS D, MLC 62 IR D
MLM 62 D 6B faceplate replacement kit, 6-button (MLC 62 D models only)	70-688-02	MLC 62 RS D, MLC 62 IR D

Extron® Warranty

Extron Electronics warrants this product against defects in materials and workmanship for a period of three years from the date of purchase. In the event of malfunction during the warranty period attributable directly to faulty workmanship and/or materials, Extron Electronics will, at its option, repair or replace said products or components, to whatever extent it shall deem necessary to restore said product to proper operating condition, provided that it is returned within the warranty period, with proof of purchase and description of malfunction to:

USA, Canada, South America, and Central America:
Extron Electronics
1001 East Ball Road
Anaheim, CA 92805
U.S.A.

Japan:
Extron Electronics, Japan
Kyodo Building, 16 Ichibancho
Chiyoda-ku, Tokyo 102-0082
Japan

Europe, Africa, and the Middle East:
Extron Europe
Hanzeboulevard 10
3825 PH Amersfoort
The Netherlands

China:
Extron China
686 Ronghua Road
Songjiang District
Shanghai 201611
China

Asia:
Extron Asia
135 Joo Seng Road, #04-01
PM Industrial Bldg.
Singapore 368363
Singapore

Middle East:
Extron Middle East
Dubai Airport Free Zone
F12, PO Box 293666
United Arab Emirates, Dubai

This Limited Warranty does not apply if the fault has been caused by misuse, improper handling care, electrical or mechanical abuse, abnormal operating conditions, or modifications were made to the product that were not authorized by Extron.

NOTE: If a product is defective, please call Extron and ask for an Application Engineer to receive an RA (Return Authorization) number. This will begin the repair process.

USA: (714) 491-1500
Asia: 65.6383.4400
Europe: 31.33.453.4040
Japan: 381.3.3511.7655

Units must be returned insured, with shipping charges prepaid. If not insured, you assume the risk of loss or damage during shipment. Returned units must include the serial number and a description of the problem, as well as the name of the person to contact in case there are any questions.

Extron Electronics makes no further warranties either expressed or implied with respect to the product and its quality, performance, merchantability, or fitness for any particular use. In no event will Extron Electronics be liable for direct, indirect, or consequential damages resulting from any defect in this product even if Extron Electronics has been advised of such damage.

Please note that laws vary from state to state and country to country, and that some provisions of this warranty may not apply to you.

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